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# USSR Report

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15 August 1983

## USSR REPORT

## AGRICULTURE

No. 1395

## CONTENTS

## MAJOR CROP PROGRESS AND WEATHER REPORTING

Shortcomings in Belorussian Planting Work Noted (SEL'SKAYA GAZETA, 20 Apr 83).....	1
Fight Against Weeds Important in Ensuring Good Harvest (V. Samersov, T. Golovnya; SEL'SKAYA GAZETA, 11 May 83).....	4
Areas Planted in Winter Crops Progressing Well (A. Shipovskiy, T. Golovnya; SEL'SKAYA GAZETA, 20 Apr 83).....	6
Progress of Spring Field Work in Belorussia Reported (N. Matukovskiy; IZVESTIYA, 17 May 83).....	8
Grain Crops and Expected Harvest Times Discussed (V. Samsonov, et al.; SEL'SKAYA GAZETA, 12 Jun 83).....	12
Field Work Proceeds on Two Shifts (A. Soldatskiy; SEL'SKAYA ZHIZN', 8 Jun 83).....	15
Spring Field Work Progresses in Northern Caucasus (IZVESTIYA, 14 May 83).....	16
City Dwellers Actively Help Agricultural Workers (N. Ivanchenko; SEL'SKAYA ZHIZN', 8 Jun 83).....	20
Kharkov Oblast Row Crops Well Tended (I. Lakhno; PRAVDA, 18 Jun 83).....	22

Fallow Care for Optimal Harvest (V. Krut'; SIL'S'KI VISTI, 5 Jun 83).....	24
Harvest Preparations in the Ukraine (SIL'S'KI VISTI, 29 May 83).....	26
Irrigation Progress and Problems in Ukraine (SIL'S'KI VISTI, 21 Apr 83).....	27
Sugar Beet Production Problems in Poltava Oblast (I. Lakhno; PRAVDA, 26 Apr 83).....	31
Briefs	
Barley Plantings	33
Ripe Grain	33
Crop Planting	33
Weed Growth	34
Growth Regulators	34
Agricultural Pests	34
Buckwheat Planting	34
Growth of Weeds	34
Potato Plantings	34
Optimal Planting Times	34
Agricultural Tests	35
Burying Beetles	35
Early Spring	35
Early Grain Crops	35
No Manual Labor	36
Sugar Beet Production Plan	36
Less Seed Required	36
Density of Beet Plantings	36
Low Sugar Beet Yields	37
Branch Intensification Required	37
Sugar Beet Sowing Completed	37
Industrial Technology Employed	38
Kuban Grain	38
Good Grasses	38
Selective Mowing	38
Tending Plantings	38
Large Wheat Areas	38
Harvest Plans	39
Grain Crop Progress	39
Fertilizers Needed Now	40
Hay Procurement	40
Help From Aviation	41
Stavropol Commitments	41
Corn Seeds	41
Machine Haying	41
Planted Grasses	41
Perennial Grass Mowing	42
Busy Times	42
Industrial Hectares	42

Alfalfa Mowing	42
Mass Harvesting	43
Mountain Meadows	43
Winter Grains	43
Grain Conveyor	43
Perennial Grasses	43
Irrigation Water	43
Grass Mowing	43
Grain Harvest	44
Brigade Contract	44
Irrigation Season	44
Valuable Hybrids	44
Care for the Planted Areas	44
 LIVESTOCK	
Intensification of Hog Production in Lithuania Discussed (R. Makovetskias; KOMMUNIST, No 3, Mar 83).....	46
Problems Involved in Increasing Milk Yield (V. Dobrynin; PRAVDA, 8 Jun 83).....	52
 REGIONAL DEVELOPMENT	
Roundtable Held on Estonian Agro-Industrial System (Jaan Ellen; RAHVA HAAL, 17 May 83).....	56
 AGRO-ECONOMICS AND ORGANIZATION	
Progress, Problems of Subsidiary Enterprises of Industry (SEL'SKAYA ZHIZN', 30 Apr 83, SAKHARNAYA PROMY- SHLENNOST', No 4, Apr 83).....	68
Krasnoyarsk Area Measures, by N. Tatarchuk Support From Sugar Industry	
Belorussian Experience in RAPO Development, Proposals for System Improvement (N. F. Prokopenko, et al.; VESTNIK SEL'SKOKHOZYAY- STVENNOY NAUKI, No 5, May 83).....	75
RAPO Operational Problems in Saratov Area (N. Logach; EKONOMICHESKAYA GAZETA, No 24, Jun 83).....	90
 AGRICULTURAL MACHINERY AND EQUIPMENT	
Importance of Reliability of Technical Equipment Emphasized (Nikolay Rodionovich Lozhchenko; EKONOMICHESKAYA GAZETA, No 19, May 83).....	92

Activity of Chelyabinsk Tractor Plant Described (A. Yarushin; SEL'SKAYA ZHIZN', 1 Jun 83).....	97
TILLING AND CROPPING TECHNOLOGY	
Grain Variety Development in Siberia (D. A. Saprygin; ZEMLYA SIBIRSKAYA, DAL' NEVOSTOCHNAYA, No 3, Mar 83).....	100
Grain Variety Development in Kazakhstan (N. Plotnikov, et al.; SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA, No 8, Aug 82).....	106
Follow-Up Commentary on Kazakh Grain Variety Development (SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA, No 2, Feb 83).....	109
FORESTRY AND TIMBER	
Economy in Use of Timber Promoted (A. Teterin; AGITATOR, No 11, Jun 83).....	111

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### SHORTCOMINGS IN BELORUSSIAN PLANTING WORK NOTED

Minsk SEL'SKAYA GAZETA in Russian 20 Apr 83 p 1

[Article: "Improving the Quality of Planting Work"]

[Text] Spring planting means not only the time periods for conducting all work, but also high quality. Unfortunately, they do not devote the proper attention to the qualitative aspect of the matter everywhere. What are the typical shortcomings in the cultivation of the soil and planting that were revealed on the kolkhozes and sovkhozes during the initial period of planting spring crops?

On many farms of the republic there was a lack of uniformity in the depth and density of the soil that was prepared for planting, and the ridges exceeded the agrotechnically permissible amount 2-fold. This takes place because the teeth of the cultivator do not penetrate to a uniform depth, heavy tooth harrows are used instead of medium ones for preplanting harrowing, with an inadequate depth of the working parts of the cultivator and the other equipment that is used with it, and also because the soil that is cultivated is not ripe, it does not crumble well and it becomes very compacted under the wheels of the tractors and other machines.

In this respect the following example is typical. The losses of the barley crop, according to the results of a study on the farms of Minskiy and Chervenskiy Rayons, from overcompacting of the soil by the wheels in the strips where turns are made, according to data of the Central Scientific Research Institute of Mechanization and Electrification of Agriculture, amount to 51-76 percent. It has been established that before harvesting the barley the density of the soil on the turn-around strips in a layer of 10-15 centimeters was 1.54-1.76 grams per cubic centimeter as compared to 1.35-1.46 grams on the rest of the fields. Let us recall that with a soil density of 1.6 grams per cubic meter there is almost complete oxygen starvation and suppression of the life processes of the plants.

If one keeps in mind that on the areas planted in barley in the republic the turn-around strips occupy more than 5 percent of the area and on them we fail to obtain half of the yield, then we lose more than 50,000 tons of grain here. Such is the price of overcompacting the soil on the turn-around strips just on the areas planted in barley.

In keeping with the recommendations of the Belorussian SSR Ministry of Agriculture, "The Quality of Cultivation of the Soil and Planting of Grain Crops" (1981), turn-around strips should be loosened again before planting to a depth of 12-15 centimeters, and if necessary they should be rolled and planted with the normal planting norm.

When becoming familiar with the course of field work on the Kolkhoz imeni Gorbachev in Lyubanskiy Rayon, one finds that the planting of oats has been conducted without taking these recommendations into account. The sets of planting equipment have gone around one after the other without observing the paths of movement and turns established for planting and without including the seeders in the turns, which leads to gaps in the planting and overplanting. For this reason the tongues of the shares of certain seeders and covering devices were bent even at the beginning of operation, and there were no trailer levelers or planting harrows for careful leveling of the fields or placing the seeds with the seeders. The surface of the fields after the seeders had passed was inadmissibly ridged and the depth of placement of the seeds ranged from 3 to 7 centimeters.

There is quite a different picture on the fields of the Chyrvonaya zmena kolkhoz in this same rayon, where on many sections the work has been organized according to the brigade contract. On this farm all the machines were well prepared and properly regulated and adjusted. In order to reduce the compacting of the soil, during preplanting work and planting the farm extensively uses caterpillar tractors and the wheeled MTZ's had been changed over to semicaterpillar movement.

On many farms one has occasion to see a great deal of unevenness on the fields which is formed because of the fact that the direction of plowing is not alternated, the furrows are not smoothed out and the cultivation is done without the goal of leveling the surface of the fields. And yet unevenness on the field means the retention of moisture in the low areas, breakdown of machines, a sharp reduction of the productivity of the sets of equipment and a reduction of the yields by up to 20 percent. Well leveled fields can and should be achieved as a result of correct organization of the work of the plowing and cultivator-harrowing equipment.

Preplanting cultivation, including harrowing and individual harrowing, should be conducted diagonally, or diagonally and then across. Correct implementation of this device provides for practically ideal evenness of the surface of the field, and this contributes to uniform placement of the seeds in terms of depth during planting, for vigorous shoots and for the growth of the plants.

A large shortcoming of many fields is the standing of surface water in enclosed depressions, which impedes the development of the work. A recommendation here, in addition to the leveling of the surface of the field described above, is deep slotting of the soil. This is a new, highly effective device for moisture retention and regulation of the uniformity of the moisture in the soil. The slotting is done with a special ShchN-2-140 machine or a plow that is equipped with slot cutters instead of mold boards. The depth is up to 50 centimeters and the width of the slot is 3 centimeters; the distance between the slots is 1.4 meters. The slotting lasts 2-3 years. Slotting should be

done across the slope. Then the slots catch about 300 additional cubic meters of moisture per hectare.

Because of the extensive application of high-speed tractors, SZU-3.6 narrow-row seeders at speeds of more than 10 kilometers per hour do not provide for high-quality placement of the seeds at the proper depth, especially on light soils.

Therefore for high-speed planting it is more suitable to use SZ-3.6 row grain and fertilizer seeders and SZT-3.6 grain-fertilizer-grass seeders. And the speed of narrow-row SZU-3.6 seeders should be limited to 10 kilometers per hour. The kolkhozes and sovkhoses of the southern zone of the republic which have light soils should acquire and extensively use SZA-3.6 seeders with keel shaped anchor shares, which place the seeds in the soil more precisely and uniformly.

High-quality performance of the operations for preplanting cultivation of the soil and planting, that is, strict observance of technological discipline, can provide for an additional yield of grain crops of a quintal per hectare without additional expenditures.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### FIGHT AGAINST WEEDS IMPORTANT IN ENSURING GOOD HARVEST

Minsk SEL'SKAYA GAZETA in Russian 11 May 83 p 3

[Article by V. Samersov, director of the BelNIIZR, candidate of biological sciences; T. Golovnya, chief of the plant protection administration of the RPNO of Bel'sel'khozkhimiya, and K. Padenov, chief of the division for chemical methods of the BelNIIZR]

[Excerpts] The next stage in the struggle for the harvest has arrived--caring for the planted areas. The basic devices here are the mechanical and chemical fight against weeds. Although in recent years the republic has done a good deal to clear the fields of weeds, they are still extremely weedy. Quack grass is especially widespread. While in 1978 17 percent of the arable land had it, in 1982 it spread to 48 percent of the land. The reason for this is that the specialists of many farms do not perform the generally accepted agro-technical devices for cultivating agricultural crops, they do not observe the time periods for fall fallow plowing everywhere, they conduct it without preliminary loosening of the stubble, and they are not adequately introducing semifallow cultivation of the soil. Many seeds of weeds are carried to the fields with the peat and peat-manure compost that is used as organic fertilizer.

It has now become cooler, but still the shoots of weeds have become abundant. Workers of the BelNIIZR have conducted a selective investigation for weediness of the fields of winter grain crops in Nesvizhskiy and Minskiy Rayons. It turns out that individual plants of cornflower and camomile have reached a height of 4-6 centimeters, and the number of camomile plants per square meter ranges from 10 to 50. There was an especially large amount of weeds on the sections of winter wheat and rye that were planted after the barley were harvested.

The basic care for the winter plantings has already been completed. They have been harrowed and topdressed with nitrogen fertilizers. Now it is necessary to accelerate the rates of their treatment with retardants against lodging. This was discussed in detail in an article entitled "Apply Growth Regulators," published on 20 April in SEL'SKAYA GAZETA. Nonetheless the proper amount of attention is not being devoted to this important agricultural device. At the present time winter rye is in the optimal phase of development for treatment with kampoza. But the rates of the work are extremely slow. This work has

been especially poorly organized on the farms of Mogilev and Vitebsk Oblasts. Here only 500-600 hectares are treated with kampoza each day. The aircraft have idle time. Retardants are not being applied in Verkhnedvinskiy, Starodorozhskiy or Smolevichskiy rayons. The agronomical services of these rayons, ignoring the recommendations of scientists and advanced practice in the struggle against lodging of winter crops, are deliberately planning a smaller yield.

Farm agronomists and specialists of rayon Sel'khozkhimiya associations should exert all efforts in order to complete the treatment of winter rye with kampoza in the next 4-5 days as is envisioned by the plan.

In order to fight against weeds on areas planted in spring grain crops, 2.4-D and 2M-4Kh are recommended. Their application should be started within 4-5 days on sections where the shoots have been harrowed and should be ended before the beginning of stem extension. On those areas planted in barley or oats where harrowing has not been done after the shoots have appeared, chemical weeding should be conducted beginning with the phase of development of the plants when they have 3-4 leaves. This is especially important when fighting against weeds and pests at the same time. Last year many farms missed these time periods and the chemical weeding was done even in the end of the phase and the beginning of the stem extension phase of the crop that was being treated, when the plants had become sensitive to herbicides and were damaged.

Analysis of the material and technical support in the republic shows that each rayon has a sufficient quantity of equipment and herbicides to care for the planted areas promptly at the optimal times. Everything will depend on the efficiency of the agronomical service of the kolkhozes and sovkhoses and the Sel'khozkhimiya associations. In this connection it is necessary to check once again on the readiness of equipment and the availability of herbicides. Before the beginning of the work each rayon should conduct seminars with farm agronomists and machine operators directly in the fields and on the basis of the leading farms.

Prompt and high-quality care for the areas planted in all agricultural crops constitute one of the most important conditions for obtaining large yields.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### AREAS PLANTED IN WINTER CROPS PROGRESSING WELL

Minsk SEL'SKAYA GAZETA in Russian 20 Apr 83 p 5

[Article by A. Shipovskiy, senior scientific associate of the Belorussian Scientific Research Institute of Farming, and T. Golovnya, chief of the plant protection administration of the RPNO of Belsel'khozkhimiya]

[Excerpts] Last fall the soil for the winter crops received good dressing with mineral and organic fertilizers. The winter crops were planted well and at the optimal times. Before winter the planted areas bushed out and underwent autumn tempering. By spring 98-100 percent of the plants remained. The weather conditions at the present time contribute to intensive growth and tillering of the plants. An investigation of the winter crops in many oblasts of the republic showed that on the majority of the farms there are 450 and more stalks per square meter. Their daily growth is 3-4 centimeters. In Gomel and Brest Oblasts they are in the stem extension phase.

Prompt topdressing with nitrogen fertilizers and the weather conditions contribute to the formation of a dense, productive stalk stand. This can lead to severe lodging of high-stalked strains of rye, Belta, Voskhod-1 and Belorusskaya-23, and winter wheat--Mironovskaya-808. The shortage of the yield because of lodging reaches 20 percent and more, and the productivity of the combines during harvesting decreases to one-half-one-third the ordinary level.

Under existing conditions, there is only one effective method of preventing lodging of winter crops--treatment with retardants. Kampozan M and a mixture of TUR with Kampozan M are applied to winter rye, and the TUR preparation, to wheat. These preparations retard the growth of the plant, the straw becomes somewhat thicker, the anatomical structure of the stalk changes, and its mechanical rigidity improves. The length of the stalk can decrease by 12-20 percent under the influence of retardants. As a result, the resistance of the plants to lodging increases from 0.5 to 2.5 points (on a 5-point scale).

Treatment of wheat with TUR and winter rye with kampozan M or a mixture of TUR and kampozan M must be started at the beginning of the stem extension of the plants, when they have the first internode, and it should be ended when the last leaf appears. The most favorable period for treatment is approximately 10-12 days. Later treatments by the ground method are undesirable because of

the mechanical damage to the planted areas. The planted areas must be sprinkled on warm days without precipitation at a temperature of no less than 10 degrees.

First of all it is necessary to treat the winter crops that are located on the most productive soil, where the productivity is expected to be 25 quintals of grain per hectare and more. It is not necessary to treat thin or poorly developed areas, or plants of short-stalked strains.

On those sections where early spring topdressing was conducted with a dose of 50-60 kilograms of nitrogen in active substance, it is effective to combine the application of the retardant mixture with nitrogen fertilizers dissolved in water in a dose of 30-40 kilograms per hectare.

Individual sections of winter wheat are severely weedy. These planted areas should be treated with TUR in a mixture with herbicides combined into one technological operation.

Managers and specialists of Sel'khozkhimiya associations, kolkhozes and sovkhazes must devote attention to highly productive utilization of aircraft and ground equipment, and not allow them to stand idle because of organizational reasons.

When working with retardants it is necessary to observe all measures of prevention which are envisioned for work with toxic chemicals. Each day after completing the work, the sprinklers and aircraft equipment should be washed with water.

11772

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### PROGRESS OF SPRING FIELD WORK IN BELORUSSIA REPORTED

Moscow IZVESTIYA in Russian 17 May 83 p 1

[Article by N. Matukovskiy: "The Creation of the Fields"]

[Text] Spring came to Belorussia earlier than ever before. It has never happened before that all of the oblast except for Vitebsk began planting early grain crops at the end of March, and by 15 May they had completed planting practically all of the spring crops. Even 90 percent of the potatoes were planted. This was good for the farmers, because the scope of the work was great. It was necessary to plant 1.76 million hectares in grain crops, 346,000 hectares in corn, 230,000 in flax, 52,000 in sugar beets and 366,000 in potatoes. All the spring fields now occupy 3,295,000 hectares. In order to gather from these areas 25-26 quintals of grain and 180 quintals of potatoes per hectare, as was planned, it will be necessary to invest in the fields, in addition to seeds, a colossal amount of human and machine labor.

This spring was a special one for the Belorussian peasant. The fact is that this year he is not simply fertilizing the fields and plowing them; he has begun to implement a large scientifically substantiated program for increasing the fertility of the soil which is calculated for many years. In order to obtain the maximum amount of products, man has decided to "remake" the fields.

#### A Look Into Tomorrow

G. Kovalenko, deputy chairman of the commission of the Presidium of the Belorussian SSR Council of Ministers for questions of the agro-industrial complex:

I will not hide the fact that I am glad about the initiative of the deputies of the Kroshinskiy village soviet of Brest Oblast, "protect the land, multiply the return from the hectare" (IZVESTIYA, No 70/71), which has been supported in other krays and oblasts of the country.

One can include among the problems of increasing the fertility of the soil almost everything that is being done to the land. But nonetheless fertility is primarily the amount of humus in the soil. With the existing structure of the planted areas in the republic, for each hectare of arable land, an average of 1-1.2 tons of humus is formed each year. The plant residuals produce only

400-700 kilograms of humus. The remaining quantity must be restored as a result of organic fertilizers. And this is what we are counting on.

According to theoretical and experimental data we must apply 12-14 tons of organic fertilizers per hectare, and on light soil--18-20 tons. We are already approaching this goal. This year the farms of the republic have applied to the spring crops more than 65 tons of organic fertilizer, which amounted to 18 tons per hectare.

What will this produce in the future? Special research and systematic analysis of 300 prolonged stationary and 3,000 short-term field experiments made it possible to establish the optimal parameters for the agrochemical properties of the soil. An analysis of agrochemical indicators and the experience of the leading farms which have achieved high productivity of the land show that in Belorussia, with the proper conditions, it is possible to obtain a yield of grain crops of 45-55 quintals per hectare, potatoes--350-450, and hay from perennial grasses--120-130 quintals per hectare. Incidentally, certain farms like, for example, the Osnezhitskiy kolkhoz, in good years have already gathered such harvests.

In order to achieve such productivity of the land, the kolkhozes and sovkhoses of Belorussia, over a period of approximately 10 years, must apply 70-80 million tons of organic fertilizers. It will be necessary to apply about 74 million tons for this year's crops. Where will we get such a quantity of organic fertilizers? After all, in many rayons there is not enough peat, which is one of the two components of organic fertilizers. What will replace it?

#### With The Help of Electronic Computers

M. Ruzhitskiy, deputy chairman of the republic Bel'sel'khozkhimiya association:

There is a solution. In the first place, it is necessary to apply fertilizers more intelligently, as they are applied, for example, by the Baranovichskiy Rayon Sel'khozkhimiya. Its efficiency experts have installed on the frame a tank that holds 2,000 liters from a gas tanker that has been written off. Specially manufactured blades with pipes have been attached to the hydraulic system. With their help the liquid fertilizers are applied to a depth of 10-12 centimeters and not poured over the surface as is done on hundreds of farms. This measure alone produces an additional 5-6 quintals of grain per hectare. And what if this were done everywhere?

With the existing supplies of peat we can exhaust them in 3-4 decades. Therefore even today we are orienting many farms toward utilizing spropels, household wastes and wastes from industry that are of organic origin, for example, lignine. It is produced by the hydrolysis industry which engages in the processing of sawdust, wood chips and shavings.

Beginning last year we have taken a principally new approach to the utilization of mineral fertilizers as well: we have introduced centralized distribution of them with the help of electronic computers for the various crops and fields of the crop rotations on each farm. Well-founded distribution of fertilizers

among the various oblasts was also carried out previously. But with the multistage system of "republic--oblast--rayon--farm," many unjustified adjustments were made, which led to violations of the correct ratios of nutritive substances.

Now every field on every farm receives precisely those fertilizers which it needs. I think that within a couple of years this "innovation" will have the most favorable effect on the productivity of the land. About half of the total yield of grain crops will be obtained as a result of mineral fertilizers.

And another innovation. When distributing supplies for 1983 there is to be special-purpose distribution of mineral fertilizers to hayfields and pastures. On the whole 474,800 tons of them in active substance have been allotted for meadowland, which is twice as much as in 1982. This will make it possible to obtain an additional 700,000 tons of feed units.

Indeed everything that is reasonably being done on the land increases its fertility. Therefore the republic program has "put to work" both land reclamation and agromelioration measures: leveling the surface, deep loosening of the soil, loosening with mole draining, deepening the plowed layer, harrowing, and so forth and so on. Technical equipment is needed for practical implementation of all these and other measures related to increasing the fertility of the soil.

#### Everything For The Harvest

Chairman of Belgoskomsel'khoztekhnika, B. Pozharskiy:

Unfortunately we still do not have the entire complex of machines which is necessary for complete mechanization of all work related to increasing the fertility of the soil. But we are not waiting until somebody creates it. We are doing some things ourselves. We are creating a machine for removing rocks. Even this year we will put 500 of these complexes into operation. In addition to the fact that they remove the rocks, they also level and loosen the upper layer of the soil. We intend to solve the problem of completely clearing the fields of Belorussia in 10 years.

Or another problem which pertains directly to fertility--the replacement of the old plow with the cultivator. For the plow is necessary only in the autumn for plowing autumn fallow. And in the spring one needs not a plow, but a powerful cultivator which will only loosen the soil, retaining the moisture. And it must loosen the soil after the heavy wheels of the tractor has passed. For after the heavy T-150 tractor has passed two or three times nothing will grow in its "tracks." We have made such a cultivator and have tested it.

The series has been concluded with an interview with the deputy minister of agriculture of the republic, A. Starovoytov:

The peculiarity of this spring consists not only in that it was unprecedentedly early and that we began to implement the large program for increasing the fertility of the land. One of the main peculiarities is that the RAPO's--rayon agro-industrial associations--are operating in the rayons. So far not

enough time has passed to make "global" conclusions, but the first steps are promising.

The farmer has acquired more reliable partners--the same Sel'khoztekhnika and Sel'khozkhimiya. This has been reflected in the spring field work. All the technical equipment is operating excellently and breakdowns are eliminated quickly. There are fewer complaints about the fact that Sel'khoztekhnika is fleecing the farms. Sel'khozkhimiya is interested in fertilizing the fields promptly and well. And all are interested in making sure that the land produces the maximum of what it can and should produce.

The first results of the hard work of Belorussian farmers are already in evidence--the crops appear to be excellent throughout the republic.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### GRAIN CROPS AND EXPECTED HARVEST TIMES DISCUSSED

Minsk SEL'SKAYA GAZETA in Russian 12 Jun 83 p 2

[Article by V. Samsonov, director of the Belorussian Scientific Research Institute of Farming, I. Bogdevich, director of the Belorussian Scientific Research Institute of Agrochemistry and Soil Science, and V. Samersov, director of the Belorussian Scientific Research Institute of Plant Protection: "Peculiarities of Formation of the Harvest and Expected Harvest Times This Year"]

[Text] The weather conditions at the end of April and throughout all of May contributed to a situation where the phases of growth and development of the winter and spring crops were considerably ahead of the usual times for many years. While this weather did not exert a negative influence on the formation of the winter crops, for spring grain crops, and especially barley, it was unfavorable. The higher temperatures and, in individual regions, also the shortage of moisture in the soil led to a situation where the tillering and development of the secondary root system of the barley took place at high temperatures of the air and soil both day and night, and also with intensive light. And the optimal conditions for tillering of barley is diffused light and an air temperature of +10 degrees. The increased temperature of the air reduced the influx assimilators from the above-ground mass to the roots and accelerated the phases of development. This led to a situation where the barley plants formed a weak root system. In a number of places the weak development of the root system was also exacerbated by the torrential rains which severely compacted the soil.

The consumption of nutritive elements and the growth of the plants depend on the "grasping" of volumes of soil by the root system. With a poorly developed root system the nutritional conditions for the plants are disturbed. They end up being incapable of intensively absorbing and assimilating nutritional elements, especially nitrogen, and providing for the normal metabolism of the plants under the existing conditions. As a result, chlorosis of the plants began and their growth was retarded, especially on soils where inadequate quantities of nitrogen were applied. The leaves turned yellow and they subsequently died.

With a relatively short growing period, barley is distinguished by intensive consumption of nutritive substances in the early phases of growth. From stem extension to heading it assimilates up to 67 percent of its maximum consumption of nitrogen. Therefore under existing conditions it is necessary for the barley to have an increased supply of easily assimilable nitrogen in the soil.

Investigations of the areas planted in barley in Brest Oblast by workers of BelNIIZ, BelNIIZR and the Brest Oblast agricultural experimental station showed that a kilogram of crude mass of barley contained only 8.9-10.8 milligrams of nitrate nitrogen, while the norm is 60-80 milligrams. When the spike was analyzed it turned out that in 10 of the 26 spine primordiums there had been necrosis.

The hot weather contributed to intensive development of pests and diseases. The strains of barley that have been regionalized in the republic are infected to a considerable degree with helminthosporiötic blights. The Nadya strain is receptive to reticular helminthosporiosis, and this year its infection with it is high--from 60-100 percent, and with moderate development of the disease--26-50 percent. The Mami, Favorit and Lada strains are infected mainly with dark brown and stripped helminthosporiosis. The infection of plants of these strains ranges from 42 to 70 percent, and with weak development of the disease--up to 25 percent.

The causal organisms of the disease are retained in the seeds and the plant residuals. Therefore the fields (planted areas) planted with seeds that have not been treated or have not been treated well are infected even in the phase of complete shoots, while with high-quality decontamination the infection does not begin until the phase of complete bushing or the beginning of stem extension. The harmfulness of the diseases changes depending on this.

The widespreading of helminthosporiötic blights, the optimal temperatures (above 17 degrees) and the sufficient quantity of precipitation for the development of the diseases--all this will contribute to their intensive development and acceleration of the ripening of the grains.

On sections where the barley plants have turned yellow it is necessary to immediately conduct nitrogen topdressing with a norm of 20-40 kilograms per hectare of active substance.

The development of winter rye is taking place normally. In the southern part of the republic the rye is in the stage of grain swelling, in the central agroclimatic zone--the formation of the caryopsis, and in the northern zone--the end of blossoming and the beginning of formation. On the majority of farms, as compared to previous years the winter rye has a longer spike and the blossoming has taken place under favorable conditions, which has precluded lax ear. The productive stalk stand is 450-500 spikes per square meter.

The course of spring and the beginning of summer weather processes and an analysis of the condition of the development of the grain crops (especially winter crops) make it possible to draw a conclusion about the possible time periods for ripening if subsequent weather conditions are normal. The winter crops will ripen 12-15 days earlier than usual. On 8 June the development of barley, oats and spring wheat was 7-10 days ahead of the average times. While in past years the barley, winter rye and winter wheat ripened at the same time, this year, from the condition of their development one can predict that winter rye will ripen 7-8 days before the barley does.

According to data from the hydrometeorological center of the Belorussian SSR and on the basis of long-term predictions, complete ripeness and, consequently, harvesting will begin in the southern zone on 6-8 July, the central zone--10-12 July and the northern zone--18-20 July.

In this connection it is necessary to remind the managers and specialists of farms not to forget the very important law of the grain grower--to harvest the grain that has been raised promptly and without losses.

Science and practice have proved that delay of the harvest times after complete ripeness of the grain leads to considerable losses of the crop. For example, when winter rye is harvested 14 days after the beginning of complete ripeness the losses of the crop amounted to 12.6 percent, winter wheat--9.2 percent, barley--9.1 percent and oats--18.7 percent; and when they were harvested 20 days later these figures were 15.5, 13.2, 16.4 and 31.9 percent, respectively. Therefore the optimal harvest time for winter rye should be 6-8 working days after the beginning of complete ripeness of barley, winter and spring wheat--9-10 days afterwards, and oats--3-4 days later. With less favorable weather conditions the losses increase sharply. All this makes it incumbent on managers and specialists of the farms to think even now about prompt and high-quality preparation for harvesting the grains.

All harvesting equipment and sets of grain cleaning and drying equipment should be prepared without delay. Farm specialists must determine as quickly as possible the condition of each grain field, give it the corresponding evaluation in terms of productivity, draw up a harvest plan taking ripening into account and conduct the harvest selectively, without waiting for all of the area to ripen,

The first to be harvested should be nonlodged grains, where it is possible to use the harvesting equipment with the greatest efficiency.

11772

CSO: 1824/434

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### FIELD WORK PROCEEDS ON TWO SHIFTS

Moscow SEL'SKAYA ZHIZN' in Russian 8 Jun. 83 p 1

[Article by A. Soldatskiy (Odessa Oblast): "On Two Shifts"]

[Excerpts] The plantings of row crops in the Ukraine occupy more than 9 million hectares this year. Industrial technology is used to cultivate almost half of this area. On the other planted areas, when caring for the plants they still use manual labor. These days the farmers are devoting special attention to the fight against weeds.

How many times have the clouds risen above the northern side of the sky, but a light wind carries them away and the sun shines over the steppes as usual. It is not easy for the plants and it is not easy under these conditions to raise a good crop.

When I arrived in Ivanovka it was during business hours. But in the party raykom almost all of the offices were closed. When I asked where the leaders were the person in charge looked at me surprised and mechanically answered:

"In the fields. Everyone left at the crack of dawn to go weed sunflowers."

The rains finally passed recently, although they were not abundant everywhere. The weeds began to grow rapidly. And in the rayon they decided to mobilize the workers of enterprises and institutions for destroying them. All of the existing tractors with row equipment were taken out onto the fields and herbicide machines were put to work. The goal is to keep the existing moisture in the soil only for corn, sugar beets, sunflowers and other row crops. This year they occupy about 30,000 hectares in the rayon--more than ever before. Every cultivator is accounted for and everything that can be restored has been restored. But the main thing is that a large amount of work has been done with the machine operators so that each of them has been striving to overfulfill the assignment.

In the southern and northern rayons, in the Black Sea and remote steppe rayons of Odessa Oblast, day and night, the tractor motors are humming. It is difficult. But the machine operators know that the future harvest will depend largely on the time periods and quality of their work.

11772

CSO: 1824/419

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### SPRING FIELD WORK PROGRESSES IN NORTHERN CAUCASUS

Moscow IZVESTIYA in Russian 14 May 83 p 1

/Text/ It is too early, of course, to draw conclusions. But one can speak about certain remarkable and instructive aspects of spring field work in one of our largest granaries--the Northern Caucasus.

They were very concerned here about the winter crops. Indeed, after a dry autumn and a winter without much snow they looked much worse than in past years. On some of the areas they did not improve in the spring either. And it was necessary, for example, for Kuban farmers to underplant them and to replant more than a half million hectares, or 30 percent of the area. But the work was done promptly and smoothly with good quality. Agrochemical control was arranged over literally every field. The winter crops were topdressed with mineral fertilizers twice. And now, in the opinion of specialists, the spike crops in the Kuban look quite acceptable. Another thing that helped was that they replanted only with first-class seeds.

On 12 April the planting of corn and rice was completed in the Kuban.

"It was necessary to plant the corn earlier than usual and as quickly as possible--the soil was drying out right before our eyes," explains the team leader of a mechanized team of the Kolkhoz imeni Kalinin in Kanevskiy Rayon, V. Toloknov.

Vasiliy Grigor'yevich Toloknov is called the "second Pervitskiy." Because his yields of corn grain are always high. During the past 10 years the average yield per hectare has been 58 quintals, and there has been years when V. Toloknov's team has harvested 80, 90 and sometimes even 100 quintals.

The farm is using industrial technology. Manual labor has been completely eliminated on the planted areas. The people and the teams are on collective contracts.

The high quality of labor on each field made it possible last year for the Kolkhoz imeni Kalinin to harvest 54 quintals of corn grain from each hectare and each year sell the state more than 2,000 tons of only elite seeds.

The planting of corn on the Kuban fields was done by hundreds of mechanized teams. They all had one task--to provide for reduced time periods and high quality, and not to let the soil dry out and waste moisture. The areas planted in grain corn have been extended to 370,000 hectares.

As we know, the Kuban is the main supplier of corn seeds in the Russian Federation. Last year it sent 290,000 tons of corn to the state grain bins, or 45 percent of the overall volume of procurements in the republic. The area is to sell almost as much this year--160,000 tons--and only hybrids of the first generation and parent forms. The task is not easy and will require not only the mastery of the machine operators, but also great efforts on the part of the agronomical service. This is why agronomists everywhere are keeping their eye on the areas planted in corn.

The unusually early warm weather and the rapid ripening of the soil pushed forward the times for spring field work in the Don area as well. The situation was also complicated by the fact that the time was pushed to the limit: for instance, the machine operators did not manage to complete the planting of early spring crops before the time came to irrigate and plant the row crops. Rice growers of the oblast began planting on the paddies . . . a month earlier than they have for many years.

To the honor of the grain growers of the Don, the weather did not stop either the complexes or the brigades or the teams, of which more than 1,800 are working under a collective contract. There is now a lot of work: it is necessary to plant the row crops, topdress the winter crops on an area of 260,000 hectares, irrigate the planted areas and be concerned about the rice paddies.

"The peculiarities of this year," the first secretary of the Salsk Party Gorkom, V. Pyshnenko, told us, "have to do not with the early arrival of spring, but with the fact that the optimal time periods for field work arrived so close together. But this, perhaps, is for the better. The farmers were ready for everything. And here is the result: the farms of the rayon finished planting in 3 days. I have in mind early spike crops and the replanting of winter crops. One should note that only efficient agronomical maneuvering made it possible to cope with such hard work. The agronomical service was well arranged--this is our main shock force. I shall give a concrete example: This year large areas had to be planted in barley. How did the agronomists approach this? During the brief spells of good weather in February they managed to smooth out the clumpy soil, to retain the moisture and even to cultivate and plant some of the arable land. The earliest shoots were obtained here. The planting was done only with regionalized strains and seeds of high conditions. Plenty of fertilizer was applied to the barley. There was not very much moisture in the soil. How did they retain it? The agronomists refrained from using disk and subsoil implements."

The agronomists were especially responsible about rolling the soil after planting. Many farmers regard this device as a possibility of "raising" the moisture to the grain and thus providing for vigorous shoots. But most frequently they have applied it without keeping track and without a system, forgetting that it has other advantages. Experience shows that rolling helps the soil to warm more rapidly and fields that have been rolled are less harmed by dust storms.

As research of the Don Zonal Scientific Research Institute of Agriculture, the Northern Donets experimental station and the Krasnoarmeysk Experimental Point has shown, for a number of years the additional yield amounts to 4-5 quintals per hectare.

The peculiarities of the spring made it necessary to revise the structure of the planted areas.

"There is always a lot of trouble with corn," said an agronomist of the Kolkhoz imeni Dzerzhinskiy in Morozovskiy Rayon, I. Bogachev, "but we boldly expanded the areas planted in it. Last year it occupied 180 hectares, and this year we have allotted 400 hectares of the best land. We do not have irrigation, but we managed to achieve a productivity of 30 quintals per hectare. In addition to corn, we have been instructed to plant sunflowers. We have planted them on an area of 200 hectares more than last year. Last year's harvest inspires us with confidence."

We have already noted that agronomical maneuvering in the Don area and in the Northern Caucasus as a whole is now being carried out under conditions of rapid "stratification" of certain kinds of field work over others. The moisture retention and growing period irrigations began earlier than usual, for example, on the farms of Veselovskiy Rayon, which we have had occasion to visit recently. They have set the task of achieving the planned productivity on irrigated land more rapidly.

But such a rapid onset of spring practically caught the land reclamation workers of the Miusskaya irrigation system unawares. The land reclamation workers of Neklinovskiy Rayon have become part of the rayon agro-industrial association. It would seem that there would be more order now. For it was necessary to irrigate more than 10,000 hectares. There is the chief of the system, I. Garmash, and the head engineer, G. Komarov, and an authorized commission of the rayon agro-industrial association conducted an inspection. But the former did not organize the inspection of the waterworks after fall irrigations, and those who conducted the inspections did not make a single note in the documents about pumping stations. Even though certain stations were generally not ready for operation. People's controllers reveal this fact: on the fish Kolkhoz imeni Orlov for the 3rd year in a row they will not irrigate 180 hectares of land. Planners of Yuzhgiprovodkhoz are to blame for this; they "forgot" about joining the water canal to the sections that were to be irrigated.

The mechanized teams of Sal'skiy Rayon were the first of the 14 rice growing sovkhozes of the Don to begin planting rice. On the Severnyy sovkhoz good results are produced by KFS-3.6 seeders, which loosen the soil, apply fertilizers and seeds and level the soil in the paddies in one trip. Other farms also have the new seeders. But here is the problem: so far the rice growers cannot use them everywhere. They work in combination with T-150 tractors from the power takeoff shaft. But where to get these shafts even specialists of the oblast Sel'khoztekhnika cannot tell you.

Spring crops have been planted on almost 2 million hectares in the Kuban. The farms of Stavropol have completed the planting of pulse crops and sugar beets at optimal times and are now finishing the planting of sunflowers. The Stavropol workers have done most of the work on the cornfields.

The farms of the Don have completed the planting of sunflowers on an area of 407,400 hectares. Moreover, this year 162,000 hectares are being planted in sunflowers according to industrial technology with the brigade contract.

In the next few days the machine operators will also complete the planting of corn on 948,000 hectares.

There is still some time before the harvest in the southern granaries of the country. And it is too early to draw conclusions. But the preliminary results of the planting show that by spring everything was thoroughly prepared, and the agronomical services supervising the course of the work especially carefully, not allowing simplification of the technology and at the same time not adhering to standard decisions, and maneuvering flexibly where necessary.

11772

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### CITY DWELLERS ACTIVELY HELP AGRICULTURAL WORKERS

Moscow SEL'SKAYA ZHIZN' in Russian 8 June 83 p 1

[Article by N. Ivanchenko (Zaporozhye-Dnepropetrovsk Oblasts): "Everything Into the Fields"]

[Text] The first secretary of the Tokmaksiy party raykom in Zaporozhye Oblast, V. V. Timinyuk says:

"Never before have the workers of industrial enterprises and city dwellers helped so actively to accumulate the crop as this year. Why? A drought has come to the fields, and it is easier to counteract it together."

And here is the confirmation with facts and figures. Each day 3,500 people leave Tokmak to pull weeds on the sovkhozes and kolkhozes, and on Saturdays and Sundays--twice as many. Along with the workers and engineering and technical personnel of industrial enterprises and employees of city and rayon institutions and organizations, pensioners, housewives and senior classmen are going out to the fields. From the first days it became a rule that every city dweller, kolkhoz worker or sovkhoz worker cannot leave the field until the shift norm is filled. In the rows that have been covered, as a rule, there is not a single weed left. The overall area where such work has been done throughout the rayon amounted to 6,600 hectares during the first week, and 4,400 hectares were weeded by assistants from the city.

Commenting on the work to care for the planted areas in Zaporozhye Oblast as a whole, the chief of the oblast agricultural administration, G. D. Golovenko, notes not without satisfaction:

"The tundra spring everywhere exacerbated the collective concern for pre-preserving the crops. From the rayons and farms they are still calling to ask that their gratitude be extended publicly to all who come to weed the fields from Zaporozhye and Berdnyansk, from Primorsk and Vol'nyanka . . . it is as though the city dwellers are working in their own fields."

Through the joint efforts of workers of villages and cities the "green fire" which was about to break out under the dry conditions was quickly extinguished. The cut weeds will no longer take moisture from the corn and sunflowers, from the castor plants and sugar beets, from the vegetables or from the melons.

These days the same picture can be seen in the neighboring Dnepropetrovsk Oblast. Regardless of the direction in which one travels--toward Pokrovka or Krivoy Rog, Magdanilovka or Nikopol', Krinichki or Sinel'nikovo-- the fields of row crops on both sides of the row are usually colored not only with women's shawls and kerchiefs, but also with men's caps. The oblast newspaper, DNEPROVSKAYA PRAVDA, regularly informs its readers about the work for caring for the planted areas. According to its calculations, each day up to 75,000 people participate in this work, about half of whom are patrons who are workers and city employees.

There are also many pensioners in the fields. The initiators were veterans of labor from the Kommunist kolkhoz in Magdanilovskiy Rayon. They announced: "Our hands can still do a great deal!" And they were called upon to keep the kolkhoz garden free of weeds. The good example attracted many, and 2,500 pensioners are working again. On the Rodina kolkhoz, the Kolkhoz imeni Frunze and the Druzhba kolkhoz they have been formed into permanent brigades.

The Dnepropetrovsk Oblast agricultural administration has announced that weeding and interrow cultivation of the row crops will be completed.

11772

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### KHARKOV OBLAST ROW CROPS WELL TENDED

Moscow PRAVDA in Russian 18 Jun 83 p 3

[Article by I. Lakhno (Kharkov Oblast): "The Price of a Work Hour"]

[Excerpts] Farmers of Kharkov Oblast have allotted 560,000 hectares to row crops--sugar beets, corn and sunflowers. This is much more than in past years. It is understandable that the load for caring for the planted areas has also increased.

From region to region the fields are covered with green shoots. Not a single stalk of a weed is in evidence. But two sets of equipment are still employed in the interrows.

The new labor organization, which is based on autonomous financing and contracts, would conventionally double the forces of the mechanized teams of Bogodukhovskiy, Krasnokutskiy and Sakhnovshchinskiy rayons. Such an important and labor-intensive agricultural device as forming the property density of the sugar beet shoots was conducted for the first time here in 7-10 days.

The Novovodolazhskiy party raykom and the rayon agro-industrial association devote special attention to those farms which have still not fully assimilated industrial methods of raising sugar beets and other industrial crops. Each day pensioners, housewives and employees of rayon institutions come to help farmers from Novaya Vodolaga alone.

Another feature is that the teams under contract in the oblast have taken on responsibility for cultivating grain corn on 90,000 hectares using industrial methods. Many machine operators have made a commitment to raise 500 quintals of sugar beets and 500 quintals of corn grain on each hectare of planted area that is assigned to them. To do this they must utilize efficiently the entire arsenal of available means. In particular, corn growers of Kharkovskiy Rayon have organized irrigation of the planted areas using local water.

Thus it is even more disappointing that the caring for the planted areas has not been organized as well as possible everywhere. Thus on the farms of Dvurechanskiy and Zachepilovskiy Rayons considerable areas are overgrown with weeds.

Many kolkhozes and sovkhoses of the oblast are missing the best time periods for cultivating the interrows and conducting mineral topdressing of the planted areas. The party committees and the rayon agro-industrial associations should display more concern so that organizational errors are not committed on the fields and that from day to day the sugar beet and corn plantations will gather forth.

11772

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### FALLOW CARE FOR OPTIMAL HARVEST

Kiev SIL'S'KI VISTI in Ukrainian 5 Jun 83 p 1

[Article by V. Krut', doctor of agricultural sciences: "Care of Fallow"]

[Text] To improve soil moisture in the present droughty conditions in the steppe zone and in individual rayons of the forest-steppe, timely and high quality preparation of black and occupied fallows is exceptionally important. Experience over many years shows that the appearance of even sprouts and high yields of winter wheat on these areas are dependent, first of all, on careful attention to them.

Practice has shown that thanks to black fallow more moisture is accumulated in the soil's plowing layer so that regardless of the weather favorable conditions develop for sprout appearance and harvest formation.

To accumulate and preserve moisture on fallow fields in the present droughty year crop care procedures must be adhered to which provide for decreasing cultivation times and depth, exchanging them for harrowing and application of herbicides. According to data from the All-Union Scientific Research Institute of Corn Growing during partial change from cultivation to harrowing and use of herbicides the average 1980-1982 winter wheat harvest amounted to 47-47.3 quintals compared to 47.5 under a system of layer cultivation. Herbicides are most appropriate for fields infested with perennial weeds. Spraying with herbicides 2.4-D during rosette formation damages the above ground portion of weeds so that there is no need for mechanical tilling.

To preserve moisture in the soil sowing layer, destroying weeds, fallows should be harrowed on time. After summer rains this agricultural measure is no less effective than cultivation. However, it is important to undertake this step when the weeds are in a sprouting phase. This work should be done with BIH-3 or tooth harrows with welded segments.

The number of cultivations should be minimal in the summer. The depth should be no more than 6-8 cm and 5-6 cm prior to sowing. Cultivators KPS-4 are equipped with well-sharpened and adjusted sweep working parts which do not displace moist and dry soil layers during tillage. Cultivators USMK-5.4 are also widely used.

This year an earlier harvest is possible from occupied fallows and it would, therefore, be feasible to prepare these areas for sowing and growing high winter crop yields. Consequently these areas should not be used for repeated sowing of feed crops. In unwatered lands they generally do not even provide a satisfactory harvest and in addition deplete occupied fallow as a winter wheat predecessor.

In today's droughty conditions a shallow soil tillage, 10-12 cm deep, should be used on occupied fallows in the steppe zone and most of forest-steppe zone. It will assure moisture preservation in deeper soil layers and its accumulation in the upper layers. Shallow tillage is accomplished with plowshare stubble mulchers PPL-5-25, anti-erosion cultivators KPE-3.8 and DPSH-9, disk harrows BDT-7 and combined soil tilling units AKP-2.5. If organic fertilizer is applied to occupied fallows it should be plowed in 16-18 cm deep.

Occupied fallow tillage requires precise work organization. Since fallow occupying crops are harvested daily from a comparatively small area, at night these plots should definitely be mulched to preserve soil moisture. Basic field tillage should also be done, levelling and pulverizing area surface. This is one of the most important conditions for preserving moisture in the sowing layer.

After basic tillage of occupied fallow some time still remains until the optimal dates for sowing winter crops. Mineral fertilizer should be applied during this period, mostly through the local method and also specific care measures should be undertaken as on black fallows.

Agronomists have the final word in organizing fallow crop care. Taking scientific data and their own experience into account they should determine the optimal variant of fallow care according to the conditions of each field. This will provide for the receipt of timely sprouts and a high winter crop yield in 1984.

9443

CSO: 1811/43

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### HARVEST PREPARATIONS IN THE UKRAINE

Kiev SIL'S'KI VISTI in Ukrainian 29 May 83 p 1

[Text] Winter crop grain is now forming in the south of the republic, but over the rest of the territory barley and wheat are only in the heading and flowering stages. Harvesting preparations are finished on most farms. The harvesting-transport equipment review which was started proved to be a rehearsal for it.

More than 82,000 grain combines, tens of thousands of grain cleaning machines and also other equipment are ready to go in the Ukraine's kolkhozes and sovkhozes. Almost 230,000 trucks are ready for the grain transport season. Before showing this fleet to examination boards machine operators check their running and airtightness carefully.

Farmers in the Crimea fixed up their equipment earlier than others since they are usually the first in the republic to take it out into the grain fields. Repairmen adhered strictly to established charts and procedures. Now the oblast has the highest grain combine readiness coefficient--96 percent. Machine operators in Chernovtsy, Cherkassy, Dnepropetrovsk, Zaporozhye and a number of other oblasts are preparing their machinery at a faster pace than last year.

In a number of areas crops seemed low yielding. Therefore, harvesting units are equipped with attachments which will prevent losses in grain and straw. Working plans call for a group method of combine operation using the division method along with straight combining.

In the final period of harvest preparation the republic's rural workers aspire to do everything to gather the harvest raised on time and without losses, to fulfill their grain sale obligations to the state.

9443

CSO: 1811/43

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### IRRIGATION PROGRESS AND PROBLEMS IN UKRAINE

Kiev SIL'S'KI VISTI in Ukrainian 21 Apr 83 p 3

[Text] Unfavorable agricultural crop conditions have developed in principal areas of irrigation farming. Productive moisture reserves in the meter layer of soil are 25-50 percent lower than average yearly figures. There was no substantial precipitation in most steppe zone rayons in the spring period and relative air moisture decreased to 20-22 percent. The expected level of ground water and water in irrigation reservoirs are also considerably below average. Filling of water reservoirs by small local streams is unsatisfactory in the Crimean, Voroshilovgrad, Nikolayev, Donetsk and other oblasts. Under these conditions, efficient utilization of all available sources for supplementing soil moisture reserves both on irrigated and dry lands is of decisive importance.

Crops in irrigated areas are basically in good and satisfactory condition. In the Crimean, Kherson and Nikolayev Oblasts 50-60 percent of winter crops are in the stem extension phase; perennial grasses are developing well. In some rayons of the above and other oblasts, farms are harvesting winter rape, spear grass and cereal pulse mixtures as green fodder for cattle. Corn and rice are being sown.

On most farms all conditions for a continued harvest growth have been met. Hydrotechnical equipment, pumping stations, irrigation canals, spraying and other reclamation machines were repaired in an organized manner. This provided an opportunity to prepare all irrigated areas by 15 March, or a month earlier than in previous years. Spraying machine, pumping station and irrigation machine operator training and retraining were accomplished on time. Specialized sectors, brigades, detachments and teams, as well as essential technology were assigned to the irrigation areas. Agreement-premium and other progressive forms of work payment are being introduced which provide for the transfer of production subsectors to a collective contract.

Moisture-charge irrigation was carried out on a larger scale than in previous years; irrigation of winter crops, perennial grasses and plantations was started almost a month earlier. Grain and feed crops located on dry areas near water sources are being watered.

This work is well organized on farms in Crimean, Odessa and Zaporozhye Oblasts where by 15 April 45-50 percent of the yearly irrigation plan was fulfilled, and 37 percent in the Kherson Oblast. In the Crimean Oblast a second irrigation of winter wheat and perennial grass crops was started. In addition, water was sent to 31,000 hectares of dry land. In Krasnogvardeyskiy Rayon maximal use is made of water sources to conduct 24-hour watering of irrigated and adjacent areas. But this does not apply to all areas.

Local checks revealed that managers and specialists on a number of farms do not take into account the specifics of this spring, show poor work organization in preserving and supplementing soil moisture reserves, delaying mass irrigation and not always adhering to recommended procedures for growing agricultural crops. The irrigation pace is slow in Dnepropetrovsk, Voroshilovgrad, Kirovograd and Kharkov Oblasts where only 11-16 percent of the plan has been fulfilled.

The main reasons for delays are shortcomings in preparation and the technical state of spraying equipment. At the specialized workshops of Snegurovskiy Rayon agricultural technology in Nikolayev Oblast only 4 of 10 pump stations were repaired. Nineteen specialized teams were created for technical servicing of spraying machinery, however, their work is poorly coordinated by the rayon association.

In some oblasts quite a few units remain idle because of poor quality tractor and watering equipment repair. At the sovkhoz "Komunist" in Beryslavskiy Rayon, Kherson area, the engine and the hydrosystem assembly were out of order in the DDA-100 unit. At "Prohres" sovkhoz in Belozerskiy Rayon DDA-100 M-A spraying tractors are used for other work. In general, almost 60 percent of tractors from these machines are not used as assigned in Kherson Oblast. In Odessa, the oblast state agricultural technology committee services only 1,204 spraying machines in 69 farms or 59 percent of those available.

Specialized repair shops do not provide fully for the repair of irrigation equipment. Engines removed from A-41 irrigation units from kolkhoz "Rosiya" and sovkhoz "Krasnodars'ky" in Saks'kiy Rayon, Crimean Oblast in October of last year and taken to the Simferopol repair-mechanical plant are still not repaired and farms are violating the irrigation schedule. A total of 21 engines A-41, 12 pumps and 5 DT-75 tractor rear decks have not been returned from repair in the rayon.

To end the unsatisfactory repair of irrigation equipment and to avoid idling "Dnipro," "Volzhanka," DDA-100M, DDN-70, and KY-50 "Sygma" spraying machines in each rayon should be serviced by UkSSR State Agricultural Technology Committee organizations.

There are also complaints against farms which have yet to provide their equipment with machinists, operators and sprayers to assure 24-hour operation. This applies, first of all, to kolkhozes and sovkhoses in Dnepropetrovsk Oblast where 507 machinists and 181 operators are still needed.

In pressurized pipelines sending water from the Dunay-Dnestr system to farms in Tatarbunarskiy Rayon, Odessa Oblast quite a few ruptures occurred through the fault of construction and irrigation farming organizations. As a result 13,600 hectares cannot be watered on time. Similar events occurred at kolkhoz "Udarna Bryhada" and sovkhos "Yuzhnyy" in Belayevskiy Rayon.

In this year's conditions, primary importance should be assigned to accurate observation of soil moisture in each crop rotation field as well as wide application of differentiated watering norms depending on the specific reclamation requirements, crop conditions and development. Therefore, on farms where there are more than 500 hectares of irrigated lands laboratories should be set up to determine soil moisture and provide practical correction of watering systems.

Agricultural organs and farm managers should watch to make sure that progressive methods are introduced for establishing and adhering to optimal irrigation systems. It is important to set up 10-day watering schedules everywhere, fulfilling them in an organized manner on each farm. Due to unfavorable weather conditions, a decrease in plant development may be observed over considerable areas. This calls for additional measures to improve crop structure on irrigated lands--expanding areas for seed corn, soy bean and feed crops, and maximal increase of interval and repeat crops (bringing them up to 20-25 percent of crop rotation area).

Among measures to increase water farming productivity special importance is attached to a scientifically documented fertilizer application. The highest returns are achieved from an application of 240-260 kg of active mineral fertilizer. But in Bobrinetskiy and Maloviskivskiy Rayons, Kirovograd Oblast, this year only 57-78 kg mineral fertilizer per hectare were allotted.

Everything should be done now to promote joint efforts of agricultural and irrigation farming workers as well as state agricultural technology committee in countering unstable weather with reclamation efforts to assure the projected harvest on irrigated lands.

Summary for Irrigation Operations as of 15 April

<u>Oblasts</u>	Fulfillment of Yearly Plan (percentage)	Spraying Machines Used	
		<u>Total</u>	<u>24-Hour</u>
Odessa	50.8	820	335
Crimea	42.2	1,840	1,410
Zaporozhye	41.7	1,202	463
Kherson	36.6	1,766	947
Nikolayev	28.3	468	154
Donetsk	20.3	1,386	--
Kharkov	16.6	480	--
Kirovograd	16	250	--
Voroshilovgrad	15.8	540	230
Dnepropetrovsk	11.4	620	261
Cherkassy	3.2	138	--
Vinnitsa	3	--	--
Poltava	2.7	--	--
Sumy	1	28	--
Kiev	0.2	--	--

Note: Other oblasts have not started irrigating yet.

9443

CSO: 1811/40

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### SUGAR BEET PRODUCTION PROBLEMS IN POLTAVA OBLAST

Moscow PRAVDA in Russian 26 Apr 83 p 1

/Article by I. Lakhno, Poltava Oblast/

/Excerpts/ The farmers in Poltava Oblast have set aside 165,000 hectares for their beet plantations. They have undertaken high obligations -- to sell 5 million tons of beets to the state this year.

It is no secret that over the past few years the sugar content of the beets has declined on many farms as a result of various violations of the agricultural practices and incorrect combinations of mineral and organic fertilizers. While the harvests of this valuable raw material are increasing, the yield of the final product is declining.

The processing enterprises are paying the farms more than the basic price for sugar content. And yet the direct creators of the sweet roots -- the farmers -- are by no means interested in this fact in all areas.

The present goal of the contractual teams is that of combining good beet yields with high quality.

"The yield, similar to the sugar content in root crops, is established in the spring and thereafter it forms throughout the summer" stated the chief agronomist for technical crops of the oblast's agricultural administration V. Yukhno, "Here, in addition to direct interest on the part of the machine operators, we are making extensive use of certain other innovations. For example, strains having a raised sugar content lend themselves more readily to the use of an industrial cultivation technology."

The "Veselo-Podolyanskaya odnosemyannaya-29" variety, which now occupies 95,000 hectares, has made it possible to convert two thirds of all of the sowings over to mechanized cultivation. One half of the beet plantations in the oblast have been cultivated using sweep equipment. And the experience of the farmers reveals that this is producing an increase in yield compared to the traditional technology.

But there are still many farms in the oblast where the machine operators prepared very slowly for the work and are now hurrying to make up for lost time. And it is not easy to recover such lost time, especially in those areas

where the organization of the work leaves a great deal to be desired. Thus, in Gadyachskiy Rayon, 215 tractors had not been prepared for operations prior to the commencement of sowing. In other words, one out of every six units did not take part in the busy period of spring work. Hence the haste and the pursuit of volume and hectares to the detriment of quality. The machine operators at the kolkhozes imeni Gor'kiy, Zarya Kommunizma and imeni Frunze were especially guilty in this regard.

The beet growers in Karlovskiy Rayon have completed their sowing work and have already commenced tending their plantations and their neighbors -- in Mashevskiy and Chutovskiy Rayons -- have dragged out their sowing operations. It is known that the carrying out of the spring work in an organized manner makes it possible to obtain a fine harvest and also to make a worthy contribution towards implementing the food program.

7026

CSO: 1824/443

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BRIEFS

BARLEY PLANTINGS--As of 6 June the condition of significant areas planted in barley in the republic was unsatisfactory: a low coefficient of bushing, considerable arrears in growth, yellowing and necrosis of the lower leaves, and there is a reduction (falling) of the spikelets in the spike. The weakened plants have been infected with helminthosporiosis. The content of nitrate nitrogen in the plants on these areas per 1 kilogram of crude mass is only 8-10 milligrams (with a norm of 60-80 milligrams). This has happened because during the period of tillering of the barley the temperature of the air and soil was high, which had a negative effect on the stalk formation and the formation of the secondary root system. These plants turned out to be incapable of mobilizing the nutritive substances of the soil, including nitrogen. Taking this situation into account, it is necessary to quickly conduct topdressing of the weakened plantings with nitrogen fertilizers. For the topdressing one can use all kinds of dry nitrogen fertilizers, primarily ammonium nitrate in doses of 20-40 kilograms of active substance per hectare. The topdressing of the weakened planted areas should be conducted within a couple of days since this is the only possible method of halting the dying off of the spikelets that are already in the spike. In order to avoid possible burning of the leaves the topdressing should be conducted in dry weather. [Text] [Minsk SEL'SKAYA GAZETA in Russian 8 June 83 p 2] 11772

RIPE GRAIN--Minsk--The grain is ripening more quickly than usual on the fields of Belorussia. In order to harvest them they have completed the formation of more than 3,000 complex detachments which join together powerful technical equipment and highly skilled machine operators. [Text] [Moscow TRUD in Russian 1 July 83 p 1] 11772

CROP PLANTING--Taking advantage of the favorable weather, the majority of farms, rayons and oblasts have completed the planting of grain and pulse crops, flax and sugar beets. The planting times for spring crops have been delayed in a number of rayons of the northern part of the republic. Agronomical and engineering services and farm managers must exert maximum efforts and organization in order to complete the planting of flax and sugar beets in the next 2 or 3 days, to plant the potatoes before 16 May, and to complete the planting of grain crops in the next few days. [Text] [Minsk SEL'SKAYA GAZETA in Russian 14 May 83 p 1] 11772

WEED GROWTH--The available moisture in the soil and the temperature conditions contribute to rapid growth of weeds on areas planted in all crops. Therefore farm agronomists, plant protection services and Sel'khozkhimiya must organize harrowing of the grain crops before and after the shoots appear, interrow cultivations of row crops, and chemical weeding. [Text] [Minsk SEL'SKAYA GAZETA in Russian 14 May 83 p 1] 11772

GROWTH REGULATORS--In all zones of the republic on highly productive sections of winter crops the time periods for applying growth regulators are coming to an end. Before 18 May it is necessary to complete their treatment with TUR and kamposan against lodging everywhere. [Text] [Minsk SEL'SKAYA GAZETA in Russian 14 May 83 p 1] 11772

AGRICULTURAL PESTS--The warm and sunny weather has contributed to the activation of pests of agricultural crops. The areas planted in flax and sugar beets are threatened with flax fleas and opaque burying beetles, whose numbers are expected to be higher than the maximum. Therefore flax and sugar beet growers and special services for signalization and prediction, and also plant protection services should establish daily observance of the development of these pests and organize prompt treatment of the planted areas. [Text] [Minsk SEL'SKAYA GAZETA in Russian 14 May 83 p 1] 11772

BUCKWHEAT PLANTING--In the southern and southwestern zones of the republic the optimal times for planting buckwheat are approaching. The attention of the agronomical service should be devoted to high-quality preparation of the soil and prompt planting of this crop. [Text] [Minsk SEL'SKAYA GAZETA in Russian 14 May 83 p 1] 11772

GROWTH OF WEEDS--The warm weather that has come contributes to intensive growth of weeds. In order to fight against them it is necessary to put to work all equipment for applying herbicides that belongs to the kolkhozes, sovkhoses and Sel'khozkhimiya. More than half of the area of spring grain crops are to be treated and weeded by the chemical method on the farms of Slonimskiy, Shchuchinskiy, Brestskiy, Luninetskiy, Kletskiy and Minskiy rayons. The farmers are behind in this work in Korelichskiy, Smolevichskiy, Krasnopol'skiy, Kirovskiy and Beshenkovichskiy rayons. [Text] [Minsk SEL'SKAYA GAZETA in Russian 24 May 83 p 1] 11772

POTATO PLANTINGS --Many farms of the republic are late in conducting blind hilling of potatoes, and the plantings are being overgrown with weeds. They are especially far behind in treating the potatoes in Drogichinskiy, Dokshitskiy, Orshanskiy and Borisovskiy rayons, while the kolkhozes and state farms of Petrikovskiy, Braginskiy, Ivanovskiy and Pruzhanskiy rayons have completed the second cultivation of the planted areas. They have cultivated the potatoes for the second time on one-third of the area in Uzdenskiy and Starodorozhskiy Rayons. [Text] [Minsk SEL'SKAYA GAZETA in Russian 24 May 83 p 1] 11772

OPTIMAL PLANTING TIMES--The optimal times have arrived for planting buckwheat and cucumbers and setting out cabbage and tomatoes. It is necessary to remember that strict observance of the time periods will help to obtain the planned yield of vegetables. [Text] [Minsk SEL'SKAYA GAZETA in Russian 24 May 83 p 1] 11772

AGRICULTURAL TESTS--The sharp increase in the air temperature has strongly increased the activity of pests of agricultural crops. The mass flight of Swedish beetles has begun, and they exceed their maximum permissible density 3-4-fold. The pests are especially dangerous for shoots of spring grain crops with late planting times. Specialists of the prognostication services of plant protection stations and farms must immediately conduct a careful examination of the planted areas and, where necessary, during chemical weeding add insecticides to the herbicides. [Text] [Minsk SEL'SKAYA GAZETA in Russian 24 May 83 p 1/ 11772

BURYING BEETLES--There is a very large number of burying beetles on the areas planted in sugar beets. Their larvae have begun to hatch. It is necessary to take measures immediately to protect the sugar beets, treating them either with a 20 percent metaphos (1-1.5 kilograms per hectare) or with a 40 percent phosphamide (0.8-1 kilograms per hectare). [Text] [Minsk SEL'SKAYA GAZETA in Russian 24 May 83 p 1/ 11772

EARLY SPRING--Brest--Spring has come into its own in the Belorussian forest areas. The farms of the southwestern rayons began planting early spring crops a week earlier than last year. They have brought 12,000 sets of equipment out onto the fields. All the high-powered tractors that are being used to prepare the soil are being used only with wide-grasp machines and equipment. The optimal time periods for field work are being strictly observed. Brigades and teams everywhere are working under a collective contract and on two shifts. The farms of the oblast will have to plant grain and pulse crops on more than 200,000 hectares. More than two-thirds of the area have been allotted to barley. They are expanding the areas planted in intensive strains of this crop--Favorit and Torkel. All of the drained peat bogs were prepared in the autumn for planting spring crops. As practice shows, this produces a great time advantage. The leading farms are planting the grain crops of reclaimed land within 3-4 days. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 27 May 83 p 1/ 11772

EARLY GRAIN CROPS--The warm weather has accelerated the ripening of the soil in the south of Mogilev Oblast. Taking advantage of the favorable conditions, the farmers of Gluskiy and Osipovichskiy Rayons were the first in the oblast to begin planting spring grain crops. The front of the spring work is expanding each day. In order to conduct the entire complex of field work this year, the kolkhozes and sovkhozes have created 406 mechanized detachments and 4,192 teams. For the first time more than 300 teams for raising potatoes, corn and flax will work by the collective contract method. All the mechanized formations are equipped with highly productive technical equipment for high-quality treatment and preparation of the soil, application of fertilizers and planting of seeds. Along with the agricultural workers, about 2,000 machine operators from the cities and rayon centers are already working on the fields. The farmers of the oblast have set themselves a task: to conduct the planting of early grain and pulse crops at optimal times and to lay a solid foundation for ensuring that they produce 25-26 quintals from each hectare. [Text] [Minsk SEL'SKAYA GAZETA in Russian 7 April 83 p 1/ 11772

NO MANUAL LABOR--Kharkov, 15 Jan--The formation of mechanized beet production teams has been completed on farms in Kharkov Oblast. This year they are employing an industrial technology for the cultivation of this crop on 55,000 hectares -- one half of the areas assigned. The highly productive units placed at the disposal of the farmers are making it possible to grow the beets in the absence of manual labor. Specialists attached to the Ukrainian Scientific Research Institute of Agricultural Machine Building have carried out a cycle of exercises with the machine operators of all 800 teams in laboratories, departments and rural training course combines. The machine operators are also receiving assistance from subunits of obtsel'khozkhimiya. Taking into account the requirements of each field, 32 tons of organic material and 3.5 quintals of mineral fertilizer have been applied per hectare of arable land. The required supply of fuel and lubricating materials is being created on the farms for the spring operations. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 16 Jan 83 p 1/ 7026

SUGAR BEET PRODUCTION PLAN--Ukrainian SSR--Cherkassy Oblast provides one tenth of the sugar being produced in the republic. This year the farms here have resolved to supply the receiving points with 4.17 million tons of beets and the workers in industry -- to produce 586,000 tons of sugar. Considerable areas have already been sown in beets in Vinnitsa, Chernovtsy, Nikolayev, Odessa and other oblasts. During the third year of the five-year plan, sugar beet production in the republic must be raised to 54 million tons. The Ukrainian beet growers are sowing more productive varieties on 1 million hectares, varieties which are well suited for mechanized cultivation and harvesting. This year's spring period was the first one in which full use was made of the organizational and economic measures developed during the May (1982) Plenum of the CPSU Central Committee. Extensive use is being made of the collective contract method as a more improved form for cost accounting relationships, based upon the mutual interests of a brigade, team, kolkhoz or sugar plant. Throughout the republic, greater use is being made of the socialist competition for the highly productive use of equipment, for high quality field work and for obtaining a good harvest during the pivotal year of the five-year plan. /by A. Dolenko/ /Excerpts/ /Moscow IZVESTIYA in Russian 9 Apr 83/p 1/ 7026

LESS SEED REQUIRED--Kiev--This year the beet growers on a majority of farms in Volyn and Ternopol Oblasts required only one half as much seed for sowing purposes as has been required in previous years. This is the result of having equipped the sowing machines with new attachments which make it possible to carry out the sowing work strictly in keeping with the desired plant density. This eliminates the manual thinning out of the seedlings. Hundreds of units have been equipped with this effective innovation. /Text/ /Moscow TRUD in Russian 18 May 83 p 1/ 7026

DENSITY OF BEET PLANTINGS--Poltava, 23 May--The oblast's beet growers completed forming the density of their beet plantations considerably earlier than usual. The farmers in Karlovskiy, Mirogorodskiy, Chutovskiy, Khorolskiy and Velikobagachanskiy Rayons were the first to complete this very important (for the harvest) technological operation. The beet growers were actively assisted

by tens of thousands of residents of cities, rayon centers and villages. The sowings are presently growing at an intensive rate. A top dressing of mineral fertilizer was applied to them during inter-row loosening of the soil. /by/ N. Demikhovskiy/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 24 May 83 p 1/ 7026

LOW SUGAR BEET YIELDS--For the purpose of successfully solving the tasks assigned to the republic in connection with carrying out the food program, exceptional importance is attached to the accelerated development of the technical crop branch. Together with the processing industry, these crops ensure the production of almost 1 million rubles worth of food products annually. Sugar beet production plays an important role in this regard. Many labor collectives are obtaining high yields from year to year by skilfully taking advantage of accumulated experience, the logistical base for production and the achievements of scientific-technical progress. However, proper attention is not being given to the sugar beets in all areas. This is underscored by the intolerably low yields being obtained in Brichanskiy, Kamenskiy, Rezinskiy and Sholdaneshtskiy Rayons. And in such rayons as Oknitskiy, Dondyushanskiy, Yedinetskiy, Drokiyevskiy and Ryshkanskiy, the fulfillment of the plan for selling sugar beets to the state by only 42-58 percent, owing to insufficient sowing of this crop, is explained by a lack of responsibility and violations of planning discipline by the farm leaders and specialists. The bitter lesson learned last year in the neglectful cultivation of sugar beets must motivate all of the beet growing regions into implementing a complex of measures aimed at ensuring the production and sale to the state of 3 million tons of the sweet roots in 1983. /Excerpts/ /Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 1, Jan 83 p 2/ /COPYRIGHT: Izdatel'stvo Tsk KP Moldavii, "Sel'skoye khozyaystvo Moldavii", 1983/ 7026

BRANCH INTENSIFICATION REQUIRED--Certainly, in the dual process of "cultivation and preservation" a definite role is played by production. For example, for the development of beet production we must still intensify this branch of the economy, introduce industrial technologies in all areas, plant the beets following an optimum predecessor crop (following winter wheat) and carry out the autumn plowing work correctly with a simultaneous application of 90 percent of the mineral fertilizer and 40-50 tons of organic fertilizer per hectare. But at the same time, it is necessary to recall the great losses which occur in this crop owing to the fact that the harvesting of the roots is delayed in many regions. The following fact indicates that only negligible reserves are available for improving the situation. During the 10th Five-Year Plan, 15.4 million tons of beets were shipped to the plants and yet only 14.2 million tons were accepted owing to root contamination. As a result, 1 million rubles were expended in vain, for the hauling of dirt, the soil is constantly being depleted, the duration of the sugar beet processing work is increasing and the equipment is wearing out. /Excerpt/ /Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 2, Feb 83 p 3/ /COPYRIGHT: Izdatel'stvo TsK KP Moldavii, "Sel'skoye khozyaystvo Moldavii", 1983/ 7026

SUGAR BEET SOWING COMPLETED--Lazovskiy Rayon--Yesterday sowing operations were completed on 7,000 hectares allocated in the rayon for the sugar beet plantations. The field workers are now concerned with the formation, cultivation and harvesting an average of 380 quintals of roots per hectare. /Excerpt/ /Kishinev SOVETSKAYA MOLDAVIYA in Russian 24 Mar 83 p 1/ 7026

INDUSTRIAL TECHNOLOGY EMPLOYED--Kishinev--The machine operators of Moldavia have completed sowing their sugar beets. This year, one half of the entire area assigned for this crop is being cultivated using an industrial technology. The beet growers plan to obtain 400 quintals of roots per hectare from these tracts. [Text]/ [Moscow SEL'SKAYA ZHIZN' in Russian 2 Apr 83 p 1/ 7026

KUBAN GRAIN--Krasnodar--The Kuban grain is gathering forth. The winter barley has already spiked out and the wheat is almost ready to put out spikes. An important stage has now begun in the struggle for the harvest--on the areas allotted to strong grain the first topdressing of the planted areas with fertilizers has been started. The farmers of the kray intend to sell the state a grain crop of which 90 percent are strong and valuable varieties. [Moscow TRUD in Russian 18 May 83 p 1/ 11772

GOOD GRASSES--Krasnodar--The unusually early and warm spring accelerated the development of feed crops. A good crop is being produced on practically all the area of planted and natural grassland. This has made it possible to enrich the rations with green mass. The farms which have pastures have driven the large-horned cattle and sheep out for fresh grass. [Excerpt]/ [Moscow SEL'SKAYA ZHIZN' in Russian 12 May 83 p 1/ 11772

SELECTIVE MOWING--Krasnodar--Farms of the southern part of the Kuban began selective mowing of winter barley yesterday. The grain is being harvested by reaper operators of the Severskiy, Krymskiy and Abinskiy foothill rayons and the Tamanskiy peninsula. The barley has been mowed into swathes on the first thousands of hectares. [Text]/ [Moscow SOVetskaya Rossiya in Russian 14 June 83 p 1/ 11772

TENDING PLANTINGS--Krasnodar--About 1.5 million hectares of arable land are planted in row crops in the Kuban this year. Mechanized brigades and teams are now completing their planting and have begun work for tending the shoots. On those fields where industrial technology is applied, the care for the planted areas is being carried out in an organized way--harrowing, "blind cultivation," and interrow cultivation using special subsoil tillers and harrows in order to destroy the weeds in the rows. Field workers of Leningrad, Bryukhovetskiy and other rayons of the kray are working on the planted areas as hard as they can. [Text]/ [Moscow SEL'SKAYA ZHIZN' in Russian 21 May 83 p 1/ 11772

LARGE WHEAT AREAS--Krasnodar--The wheat has spiked out in the Kuban. It occupies more than 1.3 million hectares. Strong and valuable grain will comprise 91 percent of the overall volume of its procurements. The farmers have allotted 631,000 hectares for obtaining grain of the highest quality. This area has been planted with seeds of the Bezostaya-1, Partizanka, Krasnodarskaya-46 and other strains. A full dose of the main fertilizers has been applied to all the fields and winter and spring topdressing have been done. Now the aviators are conducting nonroot topdressing with concentrated nitrogen fertilizers. [Text]/ [Moscow SEL'SKAYA ZHIZN' in Russian 27 May 83 p 1/ 11772

HARVEST PLANS--Krasnodarskiy Kray--Only a few days remain until grain growers of Krasnodarskiy Kray will have to begin mass harvesting. The machine operators are completing the preparation of the harvesting equipment. The goal of the Kuban farmers is to obtain 35-36 quintals of grain per hectare this year, and to give the country no less than 4.26 million tons of grain. The smell of ripening grain spreads over the boundless expanses of the Kuban. They occupy almost 2 million hectares. The awns of the winter barley have turned yellow, and the peas are filling out. Harvesting this crop will serve as a signal for the imminent beginning of the mass harvest, and also a kind of general rehearsal for the machine operators, repair workers, drivers and all workers of the agro-industrial complex before the decisive work on the main grainfields of the kray--the wheat fields, which occupy almost 1.3 million hectares. Grain growers of the Kuban have committed themselves to obtaining 35-36 quintals of grain from each hectare of planted area and selling the state no less than 4.26 million tons of high-quality grain. The attention of the agronomists of the Kuban is now concentrated on the barley and pea fields, which cover an area of more than 400,000 hectares. They have begun to observe each field. Laboratory workers of the kolkhozes, sovkhoses, elevators and scientific institutions have been enlisted in this work. A good deal is being done so as not to miss the best time periods for the beginning of the harvest. As before, preference is being given to individual harvesting, which makes it possible to begin the work 3-5 days earlier than with direct combining, and makes it possible to utilize technical equipment more efficiently and receive grain of better quality. Incidentally, the Kuban workers are devoting special attention to the quality of the grain. This year their task is to make sure that 91 percent of the wheat they sell to the state are of strong and valuable varieties. Everyone is preparing for this--grain growers, truck drivers and workers of the threshing floors and elevators. The topdressing of wheat with concentrated nitrogen fertilizers is being completed and the threshing floors and grain cleaning and drying equipment are being put into order. Bringing the grain up to the highest conditions and correctly storing it depend largely on this. Rayon transportation detachments are being formed. On signals from the dispatchers they will be sent to those threshing floors where a batch of strong or valuable wheat has been prepared. The harvest is not far away. The preparation for this most important work will require well-arranged and purposeful efforts on the part of all teams of the agro-industrial complex. [Excerpts] /Moscow SEL'SKAYA ZHIZN' in Russian 9 June 83 p 1/ 11772

GRAIN CROP PROGRESS--Krasnodar--The grain is filling out on the Kuban land and the barley has already turned yellow. The harvest will come soon . . . in the opinion of specialists harvesting will begin in the Kuban 7-10 days earlier than usual. And it will not be easy--because of the autumn and winter dry periods it was necessary to undersow and replant some of the winter crops. Hence the lack of uniformity in the ripening of the grain crops. All this also dictates the tactics of the harvest. It will be necessary to take into account the peculiarities not only of a rayon or farm, but of each field individually. As usual, harvest in the Kuban will begin with the barley and the threshing of peas. This will not be a simple "limbering up" (the overall area of grain and pulse crops in the kray has increased 6-fold), but a serious test. Moreover, in certain rayons of the kray the threshing of barley will coincide in time with the harvesting of early strains of winter wheat. Now, when the grain is filling out, the weather in the Kuban is calm and windless. Once in a while

there will be summer rainstorms, but aircraft from agricultural aviation are flying over the fields where the storms have passed--they are treating the planted areas to prevent chinchbugs. The grain growers are trying to take into account last year's mistakes and protect the high-quality wheat that has been raised from such hardships. "This year's harvest is the first and, one must say, a difficult test for the kray agro-industrial association," says N. Yeliseyev, chairman of the kray agro-industrial association and first deputy chairman of the ispolkom of the Krasnodarskiy Kray soviet of people's deputies. "But nonetheless our final goal is to fulfill the commitments adopted by Kuban graingrowers--to sell the state 4.26 million tons of high-quality grain.

[Excerpts/ [Moscow IZVESTIYA in Russian 12 June 83 p 1/ 11772

FERTILIZERS NEEDED NOW--Stavropol--Chemists of the Kuybyshevazot production association, when arranging the schedule for the delivery of granulated carbomide to field workers of Stavropol, forgot about the old saying: a spoon becomes more valuable at dinnertime. Thus they failed to fulfill the plan for the delivery of mineral fertilizers last quarter by more than one-third. "According to the supplies of the second quarter we should receive almost 20,000 tons of carbomide from the Kuybyshev workers. But they actually have not yet organized its delivery," the senior agronomist of the delivery devision of the Stavropol'sel'khozkhimiya association, Z. A. Zubkova, says with alarm. "And spring will not wait!" Decisive days of spring field work have come to the Stavropol area. Because of the dry periods that have lasted since last summer, the crops planted on the main grain fields, the winter fields, have become weak and some of them have had to be replanted. Prompt topdressing with granulated fertilizers is extremely effective for increasing the fertility under these conditions and, of course, it would help the Stavropol workers in fulfilling their socialist commitments for the production and sale of grain to the state. It is typical that the kolkhozes and sovkhoses of the kray intend to sell the state no less than a million tons of strong and valuable varieties. which is used for baking the most appetizing loaves. Stavropol workers supply this grain to milling enterprises of many large cities of the country. But without nitrogen fertilizers it is far from always possible to obtain wheat with an increased gluten content. For example, it is extremely effective to apply the agricultural device recommended by scientists of applying carbomide during heading, blossoming and swelling of the wheat. This period is approaching and so far the grain growers have nothing to apply. Telegrams have been "beaten out" from Stavropol to the Volga area workers requesting that they observe the established delivery schedule. And from the Kuybyshev workers, as they say, they have heard nothing at all. It is possible that Kyubyshevazot planned the peak for delivery of carbomide to the Stavropol workers for the very end of the semester. Then everything will be in order for them in respect to the fulfillment of the plan, but they still will not make their prompt contribution to this year's harvest. [Text/ [Moscow SEL'SKAYA ZHIZN' in Russian 24 April 83 p 2/ 11772

HAY PROCUREMENT--Stavropol--The kolkhozes and sovkhoses of the Stavropol area have begun mass hay procurement. More than 400 mechanized complexes and 200 teams have entered into the mowing of the grasses. During the season they will have to prepare no less than 1.2 million tons of vitamin feed. This is twice as much as has been stored up in previous years. [Text/ [Moscow TRUD in Russian 22 May 82 p 1/ 11772

HELP FROM AVIATION--Stavropol--Grain growers of the Stavropol steppes have begun nonroot topdressing of the planted areas. The route maps for aircraft of agricultural aviation have made it possible for specialists of the kolkhoz and sovkhos agrochemical express laboratories to examine the areas more precisely. There are more than 300 of these in the kray. This year Stavropol farmers intend to sell the state no less than a million tons of grain of strong and valuable strains. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 9 June 83 p 1/ 11772

STAVROPOL COMMITMENTS--Stavropol Kray--Stavropol workers have committed themselves to obtaining 24 quintals of grain per hectare, harvesting 4.7 million tons and selling the state 1.93 million tons of grain. The grain harvest is not far away. It will come first to Stepnovskiy, Kurskiy and Levokumskiy rayons. But it is precisely here that not all the threshing floors and storage facilities have been prepared, a good deal of the technical equipment is still in the shops, and there are not enough machine operators. [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 11 June 83 p 1/ 11772

CORN SEEDS--Rostov-on-Don--Moving up the time periods for placing corn seeds in the soil made it possible to use the method, which is now extensively being applied on the kolkhozes and sovkhoses of the oblast, of preliminarily covering the kernels with special films. As research has shown, this produces an additional yield of grain and green mass of 10-12 percent, and makes it possible to begin planting and harvesting earlier than usual. [Text] [Moscow GUDOK in Russian 15 April 83 p 1/ 11772

MACHINE HAYING--Rostov-on-Don--Machine operators of the Don area are conducting haying twice as rapidly as was planned previously. During the few days since the heavy rains they have stored up more than 100,000 tons of hay. The change-over of the feed procurement brigades to the contract form of labor organization and active participation of the population in haying contribute to accelerating the green harvest. [Text] [Moscow TRUD in Russian 1 June 83 p 1/ 11772

PLANTED GRASSES--Rostov Oblast--The planted grasses ripened earlier than usual on the irrigated land of the Don area. How is it best to organize their harvesting in order to complete it at the optimal times? This question was considered in advance in the Martynovskiy Rayon agro-industrial association and on the farms of the rayon. Therefore the haying here has not caught the machine operators at a loss--they have been preparing for it since winter, they have organized harvesting and transport complexes, detachments and teams, they have augmented their technical equipment and provided people to work 24 hours a day. In the work plan they determined the time periods, the technology and the volumes of feed procurements. Haying on the Don is gathering speed each day. Following the example of Martynovskiy Rayon in the oblast they have developed competition under the motto: to conduct the first mowing of alfalfa in 90-100 hours. Actively contributing to this are the soviets of the Neklinovskiy, Azovskiy, Yegorlykskiy, Sal'skiy, Veshenskiy and Tatsinskiy rayon agro-industrial associations. But the complexes on the feed fields could work more efficiently and smoothly were it not for complications because of the poor quality of repair and technical servicing of the tractors, the feed harvesting equipment and the irrigation equipment by Sel'khoztekhnika and the unproductive utilization of transportation. The creation of feed storage facilities is

also seriously in arrears. The Rostsel'stroy administration (chief--V. Popov) has failed to give the farms of the oblast about one-third of the earmarked volume of silage facilities. The assignments for the construction of feed storage facilities were not met in Tarasovskiy, Morozovskiy, Chertkovskiy and several other rayons. [Excerpts] [Moscow SEL'SKAYA ZHIZN' in Russian 29 May 83 p 1/ 11772

PERENNIAL GRASS MOWING--Machine operators of Martynovskiy Rayon in Rostov Oblast completed the first mowing of perennial grasses earlier than usual, on 27 May. They have already stored more than 12,000 tons of hay in ricks and haystacks. Harvest-transport complexes are being utilized extensively in the harvesting, which make it possible to conduct the work at rapid rates. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 29 May 83 p 1/ 11772

BUSY TIMES--Kabardino-Balkar ASSR--Now is a busy time on the fields of the Kabardino-Balkar ASSR. On some sections the shoots of corn are already stretching toward the sun while on others planting is being completed. One need only look around and one will see a rainbow over the fields and the spread wings of sprinklers--the soil is being given moisture. A good deal is being done in order to raise an average of 50 quintals of corn grain per hectare and to obtain 325,000 tons of it. The republic will have to provide selected planting material for many regions of the country. And it is necessary to help the farmers to raise a good crop and protect it from losses. [Excerpt] [Moscow PRAVDA in Russian 10 May 83 p 1/ 11772

INDUSTRIAL HECTARES--Nalchik--Agricultural workers of the Kabardino-Balkar ASSR have committed themselves this year to raising an average of 33 quintals of grain per hectare and increasing the gross yield by no less than 8 percent. High goals have been set by corn growers, sugar beet growers and feed procurement workers. Their calculations are based on daily application of industrial technology for cultivating the majority of the crops. The new labor methods have proved excellent in the republic. In 1979 3,500 hectares of corn were cultivated this way for the first time. The "industrial" hectares turned out to be much more productive than the ordinary ones. In recent years the areas assigned to progressive technology have continued to increase. Innovations are also being used extensively for raising feed crops. For the first time 500 of the 3,000 hectares in the Kabardino-Balkar ASSR that are planted in the valuable protein crop, alfalfa, have been planted with the wide-grasp method. Feed sugar beets are being raised according to modern technology. They occupy more than 2,000 hectares. The southern summer is coming on rapidly. It is no wonder that in the Northern Caucasus they think of today for planting and tomorrow for harvesting. It is necessary to prepare for this. [Excerpts] [Moscow TRUD in Russian 24 May 83 p 1/ 11772

ALFALFA MOWING--Nalchik--The farms of the Kabardino-Balkar ASSR began mowing alfalfa a week earlier than last year. Almost one-fourth of the feed fields are planted in this crop here. More than 120 consolidated autonomously financed brigades will prepare the grasses. The majority of them are harvesting more than usual. This is the result of hard work before spring came. All the alfalfa was fertilized and irrigated during the winter. It has been decided to complete the first mowing in a week. [Text] [Moscow GUDOK in Russian 24 May 83 p 1/ 11772

MASS HARVESTING--Ordzhonikidze--Mass harvesting of rape, that valuable feed crop, was begun by the farms of the steppe and foothill rayons of Northern Osetiya. The "green harvest" is being conducted by large autonomously financed mechanized subdivisions. This organization of labor will make it possible to reduce the time periods for mowing considerably. A hectare of rape on irrigated land produces up to 300 quintals of juicy mass that is rich in protein. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 28 April 83 p 1] 11772

MOUNTAIN MEADOWS--Ordzhonikidze--Feed procurement workers of Northern Osetiya began haying today at the edges of the eternal glaciers. The grass is being harvested by specialized interfarm detachments that work on the basis of intra-farm autonomous financing. This kind of labor organization will make it possible to reduce the time periods for mowing considerably. By winter the farms of the autonomous republic intend to procure more than a million tons of coarse and juicy feeds. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 29 May 83 p 1] 11772

WINTER GRAINS--Ordzhonikidze--The harvesting of winter grains has come to the fields of Northern Osetiya. Yesterday machine operators of the Mozdok steppes--the main granary of the autonomous republic--were the first to begin mass harvesting of early ripening strains of barley 10 days earlier than usual. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 June 83 p 1] 11772

GRAIN CONVEYOR--Groznyy--The grain conveyor has gone to work on the fields of the Checheno-Ingush ASSR. The first to start it up were the workers of the farms beyond the Terek where the winter barley is ripening earlier. Grain from the new harvest has already arrived at the threshing floors here. It is intended to conduct the harvest in shorter periods of time. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 14 June 83 p 1] 11772

PERENNIAL GRASSES--Donetsk--The perennial grasses are ripening earlier than usual. As soon as the alfalfa began to bud the farms of the oblast began to mow it. In Donetsk Oblast harvesting of alfalfa and sangfoin is under way. [Excerpts] [Moscow GUDOK in Russian 26 May 83 p 1] 11772

IRRIGATION WATER--Kiev--The irrigation season has begun in the Ukraine. Yesterday the irrigation workers achieved their highest labor productivity--about 100,000 hectares of planted area received water. On many farms the sprinkling equipment has been changed over to 24-hour operation. The operators and machine controllers are working under the brigade contract method, being oriented toward the final result. The area of irrigated land in the republic already exceeds 2 million hectares. [Text] [Moscow GUDOK in Russian 4 June 83 p 1] 11772

GRASS MOWING--Zaporozhye--The early arrival of spring and the unusually high temperatures for this time of year accelerated the ripening of the grasses. The kolkhozes and sovkhoses of the oblast are bringing feed harvesting equipment out onto the meadows and planted feed areas. Vol'nyanskiy Rayon began haying earlier than the others and with a great deal of organization. The collection of the Krasnozaporozhskaya poultry farm set the same task for themselves. The farm has no irrigated land and the areas of planted nonirrigated

land are suffering from a lack of water. Taking this into account the sovkhos took responsibility and is utilizing nonplanned sources for augmenting feed resources. In particular, they are straightening the ricks from last year's supplies of straw, they are treating them with ammonia in order to preserve them better, and they are harvesting wild grasses on otherwise unsuitable land --gullies, ravines, roadside strips and field protection forest strips.

[Excerpts] [Moscow SEL'SKAYA ZHIZN' in Russian 29 May 83 p 1] 11772

GRAIN HARVEST--Simferopol--This year it was difficult for the farmers to raise grain. But all of their difficulties are already behind them. Grain harvesting time has come. The machine operators have prepared for this moment carefully. The combines were checked for sealing long ago. Various adaptors were envisioned in order to harvest both the grain and the straw without losses.

[Text] [Moscow SEL'SKAYA ZHIZN' in Russian 14 June 83 p 1] 11772

BRIGADE CONTRACT--Donetsk--A brigade contract has been concluded for the grain growers' assistants in the Donbass. Today the farms of the steppe region have completed the formation of 500 harvest-transport complexes and detachments. Autonomously financed subdivisions staffed with experienced machine operators of broad profiles have been assigned 4,200 combines and more than 3,000 reapers. This will make it possible to complete the harvest of spike crops, which occupy more than a half million hectares in the oblast, in 12 working days. [Text]

[Moscow TRUD in Russian 2 June 83 p 1] 11772

IRRIGATION SEASON--Kiev--The irrigation season is in full swing in the Ukraine. On 3 June the irrigation workers achieved their highest labor productivity--water was provided about 100,000 hectares of planted areas. On many farms the sprinkling system has been changed over to 24-hour operation. The operators and machine controllers are working according to the brigade contract method, oriented toward the final result. The area of irrigated land in the republic already exceeds 2 million hectares. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 4 June 83 p 1] 11772

VALUABLE HYBRIDS--Odessa--This year 100,000 hectares of arable land are being allotted to the sunflower hybrid Odesskiy-91 on the farms of the nonchernozem zone, Krasnodar Kray, the Ukraine and Moldavia. Batches of seeds have been sent to the farmers for spring planting from the all-union selection-genetics institute where they were created. The main producers of the planting material of the highly productive hybrids of this crop have been the farms of Belgorod-Dnestrovskiy Rayon. Last year they raised more than 650,000 tons of seeds of the first generation there. In terms of productivity Odesskiy-91 has surpassed all of the other strains planted in this rayon by 5-8 quintals. This year it is intended to produce a thousand tons of seeds. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 6 April 83 p 1] 11772

CARE FOR THE PLANTED AREAS--Kiev--One of the largest areas planted in sunflowers in the country (more than 1.5 million hectares) is in the Ukraine. Comprehensively mechanized detachments, many of which have been changed over to the collective contract, have now begun the second cultivation of the planted areas. Group utilization of technical equipment makes it possible to

conduct the work with a reduced schedule. The farmers are introducing technological innovations that provide optimal conditions for the development of the plants. For example, on many farms of Odessa and Zaporozhye Oblasts the seeds have been placed in the soil with eight-row seeders. Now this is making it possible to use caterpillar tractors with wide-grasp cultivators to care for the planted areas. The productivity of these sets of equipment is twice as great as that of the usual ones. Moreover, they do not compact the soil as much. The collectives of the leading farms and processing enterprises of the republic are struggling jointly to obtain no less than a ton of oil from each planted hectare. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 15 June 83 p 17  
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## LIVESTOCK

### INTENSIFICATION OF HOG PRODUCTION IN LITHUANIA DISCUSSED

Vilnius KOMMUNIST in Russian No 3, Mar 83 pp 49-53

/Article by R. Makovetskias, Candidate of Agricultural Sciences: "Reserves of Intensive Hog Production"/

/Text/ In order for each hectare of arable land to produce not less than 1 quintal of pork, animal husbandry operations must be intensified in all areas. The principal indicators for describing the intensity of hog production -- number of young pigs obtained from sows, the weights of 2-month old pigs, the weight increases for 2-4 month old young pigs and the weight increases of fattened hogs.

The experience accumulated in the intensification of hog production in the republic almost 20 years ago is recalled. In 1965 the daily weight increase for fattened hogs, compared to 1962, increased by 139 grams or by 43 percent. More intensive fattening of hogs made it possible in 1965 to sell 17 percent more pork than was the case in 1964.

A fine indicator of the intensity of hog production is the number of hogs sold annually, compared to the number available at the beginning of the year. In early 1981 there were 2 million hogs at the kolkhozes and sovkhoses and during the year 1.6 million or 82 percent were sold. At hog production complexes where the raising of hogs is carried out on a more intensive basis, this indicator has reached 124 percent. Thus a portion of the hogs are kept too long on a fattening regime and the herd is renewed slowly, conditioned by the extensive use of sows and insufficient intensive raising and fattening. A situation must be achieved wherein 150 percent of the number of hogs available at the beginning of the year are sold annually. Such indicators have been achieved in countries having highly developed hog production operations.

The data furnished in the table on the following page testifies to the fact that in 1981, compared to 1968, the number of hogs increased twofold and yet pork production increased by only 42 percent. Although in 1981 we raised the same number of hogs on an intensive basis as were raised in 1968, pork production was 235 percent greater rather than 42 percent. Under our conditions it is unprofitable to increase pork production while lowering its intensity, with the hogs being fed 80 percent concentrated feed. Proceeding in this manner, we expend too much expensive concentrated feed, we produce considerably less pork on the same pigsty areas (in 1981 the raising of a pig required 35 more days than in 1968), we lower labor productivity and we

TABLE 1

Some Indicators of Hog Production Development at Kolkhozes, Sovkhozes and Hog Production Complexes Throughout the Republic

Year	Daily Weight Increase		Feed Units Consumed for Production of 1 kg of pork	Number of Hogs on 1 January	Pork Produced Per Hog Available at Beginning of year (kg)
	2-4 month old young pigs	Fattened hogs			
1968	360	495	7.2	1033098	127
1981	260	387	7.8	2037700	86
Including at complexes	-	552	5.6	198190	136

increase production costs. At the present time, should we be striving to achieve the same indicators for the intensification of hog production which we achieved in 1968? We believe that the answer to this question is yes. We will attempt to prove this by citing the achievements of individual farms as shown in Table 2.

The data furnished in Table 2 indicates that on farms where there is a low intensity of hog production (low weight increases), less pork is produced notwithstanding a greater number of hogs than on those farms where hog production is being developed on an intensive basis. On farms with extensive hog production, more feed units and labor are expended per unit of weight increase and here the production cost for the pork is higher. There is one conclusion: the smaller the amount of feed available the more intensive the hog raising operations and the greater the benefit to be derived.

For a daily weight increase in the hogs of 250 grams, 400 days will be required for 100 kilograms of weight increase and for a daily weight increase of 500 grams -- only 200 days. In the latter instance, the area of a pigsty is utilized twice as intensively, the amount of pork produced per unit of pigsty space is doubled and the production cost per unit of output is decreased by means of amortization. One feed unit of the daily ration for a hog undergoing fattening is used as maintenance food. Since in the first instance the hogs are maintained for 200 days longer, then 200 more feed units of maintenance food are used. Thus it is possible to obtain 40 additional kilograms of pork under normal conditions by means of such inefficient consumption of feed.

Computations indicate that with an increase of 100 grams in the daily weight increase in 2-month old young pigs and hogs undergoing fattening, the annual production of pork would increase by 10-12 percent, with the former amount of feed being consumed.

Why has there been a deterioration in recent years in the respective indicators? This is explained by several factors.

First of all, the hogs are not always supplied with adequate feed. The worst situation develops when the hogs are supplied only with maintenance food and

TABLE 2

## Intensity of Pork Production on Farms in Individual Rayons

Район (1)	Название хозяйства (2)	Количество свиней (3)	Реализовано свинины в тоннах (4)	Суточный привес (5)		Затрачено корма на 1 кг привеса (8)	Затрачено 1 ц. свинины (9)	Себестоимость привеса свинины в руб. (10)
				2-4 мес поросят (6)	откормочных (7)			
(11) Ионишкис (1980 г.)	К-з «Даукшяй» (12)	2857	303	233	473	6,39	21,1	162,9
	К-з им. Кирова (13)	3483	165	173	219	9,14	25,4	216,1
	С-з «Гатаучяй» (14)	1972	270	286	444	6,7	21,4	157,8
	С-з «Ажуолине» (15)	134	130	184	290	10,7	35,0	218,6
(16) Вильнюс (1980 г.)	К-з им. Кирова (13)	749	63,2	243	482	8,2	47,7	242,6
	К-з «Раудонойи велява» (17)	1183	52,8	182	291	7,4	66,2	387,1
(18) Пасвалис (1981 г.)	К-з «Кеменай» (19)	3357	267,2	—	441	6,8	21,3	136,1
	К-з «Венибе» (20)	3326	219,6	—	254	7,3	18,5	155,9
(21) Кельме (1981 г.)	К-з им. П. Цвирки (22)	723	72,7	350	401	10,2	25,8	198,2
	К-з им. Жемайте (23)	778	59,9	281	321	9,6	38,8	239,8

## Key:

- |   |                               |
|---|-------------------------------|
| 1. Rayon  | 11. Ionishkis (1980)          |
| 2. Farm   | 12. Daukshyay Kolkhoz         |
| 3. Number of hogs   | 13. Kolkhoz imeni Kirov       |
| 4. Pork sold in tons  | 14. Gatauchaya Sovkhoz        |
| 5. Daily weight increase  | 15. Azhuoline Sovkhoz         |
| 6. 2-4 month old young pigs   | 16. Vilnyus (1980)            |
| 7. Hogs undergoing fattening  | 17. Raudonoyi Velyava Kolkhoz |
| 8. Feed units consumed per kg of weight increase                    | 18. Pasvalis (1981)           |
| 9. Man-hours expended per quintal of pork                           | 19. Kemenay Kolkhoz           |
| 10. Production cost for weight increase in pork, rubles per quintal | 20. Venibe Kolkhoz            |
|   | 21. Kelme (1981)              |
|   | 22. Kolkhoz imeni P. Tsvirki  |
|   | 23. Kolkhoz imeni Zhemayte    |

only a portion of the productive feed. In particular, this method has been employed in recent years when, owing to unfavorable weather conditions, reductions took place in the grain crop yields. As a result, insufficient feed was procured on some farms and thus a reduction took place in the intensity of hog raising operations. And indeed this is mismanagement. For planned growth in the number of hogs, the available feed resources must be taken into account.

In view of the rapid growth in hogs and also their high fertility rate (a 12-month old sow is capable of farrowing), a real opportunity exists for maintaining as many hogs on the farms as it is possible to keep supplied with feed, assuming efficient use of the latter. One indisputable truth must be recognized: only the intensive raising of hogs will make it possible to economize in the use of feed. Otherwise the hogs will not be supplied with sufficient feed and this leads to mismanagement.

It is obvious that great importance must be attached to the quality of the feed, to its full-value and especially to its protein content. The poultry raising farms and also hog raising complexes are being supplied completely with

full-value mixed feed, while the mixed feed being produced for hog farms lacks protein raw materials. During the past five-year plan (taking into account the raw materials used for the production of mixed feed), the amount of protein-rich feed decreased from 12.9 to 9 percent. A search is not being undertaken for the opportunities for feeding very valuable and protein-rich feed to the hogs -- skim milk.

Since milk production is dependent upon the season of the year and since considerably less of it is fed to hogs in the winter, the mixed feed industry should ideally produce more protein feed during this period for satisfying the summer requirements of the farms. Indeed, during the summer the farms have more whole milk at their disposal, milk which is not characterized by a sharp protein deficit. In order to fill this void, it will be necessary to expand the areas allocated for pulse crops. The party has assigned the task -- during the next few years, to plant pulse crops on 13-15 percent of the areas set aside for grain crops, whereas at the present time they occupy only 7-8 percent. The fact that over a period of many years the daily weight increase in hogs undergoing fattening at the Kolkhoz imeni Chernyakhovskiy in Radvilishskiy Rayon is 600-680 grams and that for 2-4 month old young pigs is 419-514 grams is quite proper. On this farm, where many barley-pea mixtures are grown, more than 500 tons are fed to the hogs annually. Towards this end, fodder beans are being grown on 50 hectares at the farm and at the Kolkhoz Draugas in this same rayon, in addition to the mentioned pulse crops, rather promising fodder peas are being cultivated.

Alfalfa and particularly grass meal produced from it are considered to be especially fine and valuable feeds for hogs. The hogs assimilate approximately 62 percent of the protein available in the alfalfa and in the grass meal -- up to 82 percent. In the production of mixed feed for hogs, the republic's mixed feed industry should use only grass meal obtained from alfalfa. Those farms which grow this valuable crop must expand their growing areas and feed this very valuable and protein and mineral enriched feed to the hogs (used as fodder and as grass meal). Alfalfa or the grass meal made from it must be a component part of the mixed feed.

Only by raising the protein content in the feed is it possible to use in an efficient manner other succulent feeds having a low protein content -- potatoes, fodder beets, mixed silage. When there are less than 120 grams of protein and approximately 110 grams of the mentioned substance for hogs undergoing fattening in one feed unit of concentrated feed, then in the first instance it is advisable to feed up to 25 percent succulent feed and in the second -- up to 30 percent.

Hogs are especially sensitive to low quality feed. Mouldy or rotten grain or decayed succulent feed often cause poisoning or dysentery. The weight of sick hogs does not increase and at times it even decreases and losses occur at times. In short, great losses can occur. It has been established that in order to obtain 1 kilogram of weight increase in hogs which had gastrointestinal disorders, one more feed unit must be used than that employed for a healthy animal. Thus the quality of feed fed to hogs warrants daily attention by the veterinary-zootechnical service of the farms and all workers attached to hog raising farms. Prior to commencing the feeding of a new batch of mixed feed, it should be inspected and only high quality feed given to the hogs. One

must not overlook such a well tested measure as the armoring of seed -- high quality barley variety as additional feed for sows and young pigs (the mentioned groups of hogs are especially sensitive to the quality of the feed).

Importance is attached to adhering to the correct feeding technology. The republic does not have any one settled system. Suckling pigs are fed to their heart's content on dry feed and separated milk. However the young pigs of a weaning group are often fed too much succulent feed and thus their growth, especially during the first month following weaning, is inadequate. On some farms an unsound trend is observed of feeding more succulent feed to 2-4 month old young pigs than to bacon hogs. For the purpose of intensifying the raising of hogs, special importance is attached to the results achieved in the group of 2-4 month old young pigs. Owing to stresses (weaning from sows, regrouping, transfers to other facilities, changes in feed and so forth), which affect the young pigs in this age group, their sensitivity is raised, the resistance of their organisms is lowered and they show a greater susceptibility to diseases. In 1981 the daily weight increase in 2-4 month old young pigs was 100 grams lower than that during favorable years. Thus, means must be found for improving the situation, since young pigs which are not raised adequately on an intensive basis grow poorly even at older ages and in connection with a delay in the growth period and incomplete use of the more intense period of muscle growth (20-50 kilograms), the fattened hogs turn out to be too fat. Quite often we place the blame on the hog strain, when actually it is the result of extensive raising.

In order to improve the raising of 2-4 month old young pigs, the adverse effects of stresses must first of all be eliminated, full-value feeding must be organized and fine maintenance conditions ensured. All efforts expended for the raising of young pigs in this group are fully repaid with growth in the profitability of pork production.

The fattening of hogs from both a quantitative and qualitative standpoint is best of all characterized by feed consumption per unit of weight increase. Feed consumption constitutes approximately 63 percent of the production cost for pork. Feed consumption per unit of output is the chief indicator for the efficiency of hog production and its profitability. It is very important for this indicator to be taken into account in a very accurate manner. At the present time, the great differences in feed consumption for the production of a unit of output, prevailing at individual farms having similar conditions, forces one to draw the conclusion that considerable inaccuracies still persist in connection with consideration of this indicator. This must be corrected by introducing accurate accounting for the use of feed. In addition to the farm and field workers, this will also discipline the specialists and accountants. This indicator must be of interest first of all to the farm economists; the crediting of the feed should be carried out more correctly and more strict control exercised over its use. An important reserve for increasing the production of pork is that of lowering the consumption of feed. This must be taken into account when summarizing the results of the socialist competition and in the material stimulation of the livestock breeders.

The Baryunay Kolkhoz in Ionishkskiy Rayon serves as an example of reduced feed consumption and lowered production costs for pork. High indicators for intensified hog production operations are being achieved here on a stable basis.

Both the quantitative and qualitative results of pork production are being analyzed systematically at the farm: how much feed was consumed for the production of a unit of output and what was the production cost? Here an important role was played by the head of the hog farm communist V. Zhemlyauskena. She took steps to ensure that the pig-tenders utilized the feed in a thrifty manner, the peculiarities of each group of hogs were taken into account in the distribution of the feed, the feed had to be accounted for in a strict manner and low quality feed was not accepted. The pig-tenders themselves became interested in how much feed was being made available by the head of the farm.

They are displaying concern with regard to how much feed is being left in the feeding troughs, in the interest of ensuring that it is not thrown away prior to the next feeding. A leading worker, R. Shimolyunena, who tends more than 900 hogs, achieved an average daily weight increase of 579 grams. Last year she fattened 1,533 hogs, the weight of which amounted to 1,713 quintals. In addition to being a fine specialist, R. Shimolyunena is also a wonderful comrade who shares her experience with her colleagues.

Similar fine work results are being achieved by pig-tender P. Shimkusa. In a socialist competition among pig-tenders engaged in the raising of young pigs, outstanding work was performed by D. Stankauskena and B. Laurinavichena. As a result of selfless work on the part of the entire collective of the hog farm, the Baryunay Kolkhoz achieved the best indicators in the republic for intensity of hog production operations.

Experience has shown that the hog production complexes of our republic and the hog production farms of Estonia (they achieved the best results in the country) can solve all of the mentioned problems in a comprehensive manner through the introduction of a flow line technology for the production of pork. A flow line technology can be employed not only at complexes but also on farms, following their appropriate modernization and the erection of farm buildings. A flow line production technology is characterized by specialization in individual facilities or sections for the maintenance of productive groups of hogs and strict observance of the technological norms for the tending of livestock and rhythmic technological processes.

Even in the case of fine maintenance and feeding conditions for a large number of hogs, individual animals are subject to diseases and grow poorly. They must be singled out into a separate group and normal growth attained. This represents a reliable means for protecting other animals in a given group against diseases and for the treatment of sick animals.

On farms engaged in the breeding of pedigree hogs, more efficient use must be made of highly productive sires. In following the example of Estonia, it would be advisable in our republic to organize a hog insemination station where the best sires could be concentrated.

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## LIVESTOCK

### PROBLEMS INVOLVED IN INCREASING MILK YIELD

Moscow PRAVDA in Russian 8 Jun 83 p 2

[Article by V. Dobrynin, corresponding member of the Academy of Agricultural Sciences imeni V. I. Lenin in the column "The Food Program: Tasks, Practice and Problems": "Milk from the Farm"]

[Text] There is, perhaps, no food more useful to man than milk. And it is understandable how important is the job of increasing its production. During the 10th Five-Year Plan the average annual gross milk yield in the nation comprised 92.7 million tons. Today an increase in yield is projected to 97-99 million tons.

Is such a goal possible? It is believed to be. Many kolkhozes and sovkhoses in the Moscow, Leningrad and other oblasts annually obtain from each cow 3,000 to 3,500 kg milk. And in the nation as a whole a marked increase in production was achieved during the past year. The yields at many farms continue to rise. Thanks to this, many more hundreds of thousands of tons of milk have been purchased than during the corresponding period a year ago.

The experience of the leading collectives, such as the Tula Kolkhoz imeni Lenin, the Kiev Ploskovskiy Sovkhoz and Chinaz breeding farm in Uzbek SSR, is widely known. Animal husbandry here has been put on a scientific basis; the annual yields have been taken to 5,000 and more kilograms of milk. But in some regions the productivity is approximately half as high. During the past year, for example, the plans for the sale of milk to the state were not fulfilled by a large number of kolkhozes and sovkhoses. There are more than 40 million cows in the nation. If even 2,500 kg milk were obtained from each, the goals of the five-year plan would be exceeded.

What delays the development of important production? This question can hardly be answered simply. Clearly, extensive work methods are a major reason. There are no few instances where the cow population increases and productivity falls. And what is more, labor expenditures are extremely high. In addition, the increase in wages and payments for food, amortization and machine and equipment repair has resulted in an increase in the cost of milk.

The state raised the purchase prices for this product at the start of the current year. It has become possible to improve significantly the economics of the branch. But this requires thought and analysis. Such a rule is not, alas, universally observed. More than 10 million tons of whole milk, more than 20 million tons of skim milk and much buttermilk and they are used annually just to feed calves and for cattle feed. The result is that the farms seemingly work for themselves. This is to the detriment of the state. Such excesses can easily be avoided if zootechnical norms of milk expenditure for calves are observed and if they are in places reduced by using various substitutes.

We cannot state with complete assurance that record-keeping and the use of resources for processing are adequately arranged. Milk is judged solely by fat, which comprises only a third of the dry matter of the product. The remaining components, also very important and valuable, are as if ignored. Because of this, we lose a third of the protein and still more milk sugar. And what is more, a tenth of the fat is not used for food purposes.

Today in places even the livestockmen forget the truth of the fact that a cow's milk is in its mouth. In other words, the level of feeding of the animals determines their productivity. The quality of feed is low; it lacks sufficient protein.

The structure of rations has been appreciably altered: the proportion of concentrates in them has been sharply increased and the percentage of rough, succulent feeds has been reduced. The expenditures are unjustified and extravagant for the village economy and for the national economy as a whole. Practice has demonstrated that yields of 2,200 kg can be obtained even without grain. But an increasing amount of grain is used on the farms. During the last two five-year plans alone the cost of a centner of feed units used to obtain milk increased by 32 percent in kolkhozes and by 24 percent in sovkhozes. The cost of the product increased accordingly.

"The cow is a ruminant. It requires hay, succulent grasses and root vegetables. But we stuff her with grain. Even the swine industry does not require so much in the way of concentrates," complain even the milkmaids.

And what is more, valuable feeds are used poorly, for they are largely represented by food rather than by fodder grain. Legume crops are especially lacking.

Animal husbandry is today being changed over to an industrial basis. In so doing the cattle rations must be maximally simplified. Combined feed comprises a considerable portion of the rations. One ton of fodder, by comparison with the same quantity of grain, makes it possible to obtain an additional 250-300 mg milk. However, even the "industrial" farms still use a large part of the fodder in the form of simple mixtures. The village partners are also to blame here. Only somewhat more than 17 percent of the total volume of combined-feed production is released for cattle.

The return on investments depends upon the breeding of the cattle, upon selection work. There are no few farms where selection work is neglected, where it is difficult to determine the stock or breed to which a cow belongs. Some cows cannot be raised to 1,500 kg in productivity. But they still need hay, silage and concentrates. Here in truth the food is not for the horse, as the folk wisdom has it.

On some kolkhozes and sovkhozes there is only one calf for every two cows. And the milk yields from a barren cow, as is known, are those of a goat. There is one solution: to intensify the responsibility of specialists for the state and the quality of breeding work and monitoring of the performance of zootechnical measures; the artificial insemination stations and points must be better supplied with material and technical means. The Ministry of the Chemical Industry and Ministry of the Medical Industry do not fulfill every year assignments for the preparation and delivery to them of publications, instruments, apparatus and drug preparations.

The level of the technical provision to livestockmen also is still low. There are not enough machines for feed preparation, powerful milking machines and modern machines and apparatus for the primary processing and cooling of milk. Expenditures for providing dairy barns with equipment for the filtration, cooling and storage of milk are repaid in one and one half to two years. However, "different-caliber" machines are now used in the farms. Differing by a nonuniform capacity, size and level of automation, they do not permit the creation of production lines.

The cost of funds per one worker in animal husbandry increased during the 10th Five-Year Plan by approximately 44 percent, while labor productivity increased by only 14. Nearly nine tenths of the investment were swallowed up by the construction and equipping of poultry- and swine-producing enterprises and for cattle fattening. But limited resources were sent to the dairy branch; moreover, they were primarily used in constructing large mechanized complexes, which frequently proved to be without a firm feed base and a highly-productive herd. As a result, many such structures are half empty.

During the last 15 years the budgetary cost of construction of one site for cattle increased by somewhat more than twofold. And especially at complexes. But whereas the labor fund supply there is higher, the profitability is lower. At the same time, the experience of many collectives show that the principal resources are profitably directed at the reconstruction of existing units.

The material and technical facilities of the dairy industry are in need of expansion and modernization, primarily the cheese-making and drying facilities. It remains to increase the capacity for the output of whole-milk substitutes, to increase the production of dry skim milk.

Such tasks are hard to solve without qualified cadres. Primarily in the village. The cattle are now serviced by approximately 3.5 million people. But there are still not enough milkmaids and calpherds in many kolkhozes and

sovkhozes. The training of such specialists for farms at agricultural vocational--technical colleges is poorly arranged. They graduated only 240,000 people during the years of the 10th Five-Year Plan, or one livestock-man per year for each farm. The shortage of milkmaids and herdsmen is acutely felt in the Nonchernozem Zone of the RSFSR.

As we see, the tasks in developing dairy production are complex and multifaceted. And they require a systematic, comprehensive approach and the constant attention of livestockmen and their partners in the agro-industrial complex. Only when this condition is met will the "milk river" become fuller and dietetic production more varied.

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## REGIONAL DEVELOPMENT

### ROUNDTABLE HELD ON ESTONIAN AGRO-INDUSTRIAL SYSTEM

Tallinn RAHVA HÄÄL in Estonian 17 May 83 p 2

[Discussion summarized by Jaan Ellen: "Workstyle of the Agro-industrial Association"]

[Text] The first agroindustrial association in our republic was formed 1975 in the Viljandi Rayon, the second was founded four years later in Pärnu Rayon. In the other rayons agroindustrial associations have functioned for a year and a half. The associations are the decisive segment of agricultural management meeting contemporary requirements in its functional style, as stated at the 10th plenum of the ESSR Central Committee.

The experiences and directions of agroindustrial associations were discussed in our office. The following came to share their thoughts: Hans Loite, chairman of the Rakvere agroindustrial association, Lehti Lohmus, chief economist of the Viljandi agroindustrial association, Erich Lookene, director of the Haiba sovkhos in Harju Rayon, Henn Poder, chief of Valga Rayon's EPT [Estonian Agricultural Technology], Elmo Saar, chairman of the Võru agroindustrial association, Viktor Sartakov, director of Marjamaa sovkhos in Rapla Rayon, Valter Udam, first secretary of the ESSR Pärnu Rayon committee, Heino Veldi, first deputy chairman of the ESSR Council of Ministers and chairman of the ESSR Agroindustrial association, and Arder Väli, chairman of the agroindustrial association of Haapsalu.

#### New Levers

H. Veldi: The most important mission of both the recently established ESSR agroindustrial association and the rayon agroindustrial association is to apply measures to insure that the tasks for the production and procurement of agricultural products as outlined in our republic's food program are met.

The intensity of production in ESSR's advanced enterprises is relatively high. But their role in the total agricultural production is still small. The primary task is to produce much more in the lagging enterprises where many reserves are waiting to be used. The first task of agroindustrial combines is to raise these enterprises to at least the current average in both volume and intensity of production. The Pärnu association has done quite a bit in this area. There are opportunities to equalize production also in the

Paide, Harju, Rakvere and Viljandi rayons, each of which produces 10-12 percent of the total volume of our republic's agricultural production.

The food program includes additional means to intensify economic activity in our kolkhozes and sovkhoses. But these must be accompanied by a purposeful search for reserves in every rural area, and by effective use of existing and forthcoming resources.

V. Udam: The agricultural administration did not have such levers to aid lagging enterprises as the agroindustrial combine. Based on experiences made in Pärnu Rayon I must stress--the causes for lagging must be eliminated in a comprehensive manner.

Four years ago we listed five sovkhoses and four kolkhozes as lagging; their level of production had been stagnant. At that time their average profitability was 7 percent, and for this reason the stimulation funds were small and no bonus could be paid to good workers. For this reason dissatisfaction spread, and some workers left for stronger enterprises. The agroindustrial combine is able to make allocations from the material stimulation fund to pay bonuses to workers in the weaker enterprises.

It proved to be an unfounded fear that allocation to the common funds of the combine would impoverish wealthy enterprises. Nowhere must we build farms at someone else's expense. A couple of hundred thousand rubles a year have been enough to insure that people in the lagging enterprises also receive a bonus for doing good work.

Lagging is caused not solely by poorer natural conditions, locations, labor shortages, and managers lacking initiative. Nine enterprises have received fewer basic assets per production unit than others. In the first year of the combine they received somewhat larger quantities of mineral fertilizers, soon thereafter they got more powerful machines and concentrated feed. At the same time we required that they use the additional means effectively. An example of what has been achieved: In these nine enterprises the average milk production per cow rose by 600 kilograms over two years, while in the other enterprises that figure was 300. By 1982 the profitability of the nine was already 25 percent, five of them have been struck from the list of laggards.

H. Loite: Allocation of funds to weaker enterprises to stimulate more efficiency in people have justified themselves. For several years nobody in the Ragavere sovkhos knew what a bonus was. The combine last year allocated enough funds to several enterprises to bring the material stimulation fund up to 5 percent of the salary account. This year the stimulation fund everywhere amounts to 10 percent of the salary account.

Analysis has shown that the lagging enterprises of the Rakvere Rayon had received more resources per production unit than others, consequently, they used them more poorly than the outstanding enterprises. When a lack of people prevent the application of agrotechnical requirements, adding mineral fertilizer will do no good. With this in mind we cannot allocate

equal amounts of mineral fertilizer to, say, the Vinni exhibition sovkhos and the Nõmmekula kolkhoz. There are great variances in the amount of food required to produce a kilogram of pork--there are places where this requires 4-5 feed units, in other places 9-10 are needed. When feed shortages dictate that the number of hogs be regulated the combine recommends that excess animals of lower weight be marketed wherever feed costs are higher.

V. Udam: The agronomists of our association last year investigated why the yields in the Kõlvaja kolkhoz were low. Weeds dominated the fields, fertilizer had no effect on the grain but gave added strength to the weeds.

L. Lõhmus: In Viljandi enterprises with low profitability have been supported ever since the founding of the association. They have received 120,000-140,000 rubles annually from the material stimulation fund. This has slowed labor migration from weaker areas, field work has been done at the right time, and the best animal breeders have received bonuses. The weak have also received money from the combine's mutual assistance fund.

E. Lõökene: Production levels in the Haiba sovkhos have risen to the middle rank, but its present strength is not sufficient for further progress. The weaker enterprises also need highly productive machines, since they lack labor. But the machines are not given to us gladly; it is thought that they will not be fully utilized. But everywhere there are good men who produce well. The Haiba sovkhos has 8 operators per 1000 hectares of cultivated land, with the machines on hand they cannot finish all tasks on time. For example, we urgently need frontloaders. A wealthier enterprise keeps its fields weed-free through agrotechnical means, but we do not have the men to cultivate the fields with many other jobs to be done. Perhaps this should be taken into account when weedkillers are allocated?

A. Väli: In the Haapsalu Rayon six enterprises are listed as lagging; last year we allocated 65,000 rubles to them from the association's stimulation fund. The people there feel that their concerns are understood and they attempt to work more productively.

E. Saar: In 1981 the profits of the kolkhozes and sovkhos in Võru Rayon were under 2 million rubles, six of them showed a loss for the year. Last year was better--total profits came to 6 million, with the Varstu, Rõuge, and Sõmerpaul sovkhos showing losses, for the first of these the losses came as high as 200,000 rubles. The agroindustrial association strives to achieve faster production growth in all the enterprises of the hill country; the recent additional benefits sound promising.

The concerns of the weaker ones have met with understanding in the association's council. A sports facility was completed in the Sõmerpaul sovkhos, but there was no money for equipment, this was allocated by the association from its funds. We allocated a K-700 tractor to the Misso sovkhos, even though the fields there are small. Such a tractor, however, is needed also in the winter to keep rural roads open. The association is aware of the needs for smaller vehicles in the allocation of mowing machines, trucks, passenger cars for specialists, stone clearing machines, etc.

H. Veldi: Specialists of the agroindustrial combines, numbering 800, should exert considerably more influence over the production of enterprises lagging behind. This year 60 enterprises will receive price supports in the marketing of agricultural products. This plus economic assistance must be supplemented by a concentrated action on the part of the association's specialists in the solving of complex problems wherever one's own resources are insufficient. Above all the elementary technological requirements on the field and in the farm must be followed, and promising directions for development found.

E. Saar: I do not believe that the associations have specialists who do not want to spend most of their time on the field or at the farms. But they are forced to spend much time in gathering data, filling out assistance plans, reports and other papers, especially at the end of the quarter. There are several agencies who must have this information. The paper flow cannot be reduced at the rayon level alone, republic's organs should think about this as well. Is this not one of the reasons why the association's specialists are kept at their desks for long periods? For this reason there is less time to train young specialists in the enterprises, and to solve complex problems.

#### In The Name of a New Better Final Solution

V. Udam: At the April meeting of the CPSU Central Committee, Comrade Y. Andropov stated: "Science and experience have shown that high yields require a regional agricultural system." Have we done everything to meet this requirement? I think that for the most part much more can be done.

In the enterprises of Pärnu Rayon the use of clover in the field hay has risen from 7 to 36 percent during the tenure of the agrotechnical association. In the future that amount must decrease to half. Grass grows well on our soils, we have always been lucky, even though winter crops have often perished.

For example, the "Säde" sovkhos gathers 13 centners of grain from one hectare of clay soil, although every spring most of the winter crop is plowed under. But the same hectare yields 60 centners of dry hay, consequently, it is more practical to grow hay than grain. Scientists of the Institute of Agriculture have calculated that in the Suurejõe kolkhoz, the Pärnajaõe sovkhos and elsewhere a hectare of hay yields 50 percent more digestible protein than a hectare of grain. Hay requires half the care and resources. The scientists should continue their research and then make recommendations on what is the most practical crop for one or another region.

Up to now we aimed at producing more pork, this was good even for the laggards. Hog raising was developed by additional allocations of concentrated feed. In the future planners should consider that in Pärnu Rayon it would be more practical to raise beef, since hay grows there better than grain. Everything cannot be produced equally in every rayon, the nature of the land determined the direction of specialization.

At the same time we are looking for ways to increase grain yields, and have increased the amounts of organic fertilizer for that purpose. Grain is

urgently needed, since this year the rayon must produce 11,000 tons of pork; this is impossible without grain.

E. Saar: Before, when we received additional concentrated feed, we built many hogsheds in the Võru Rayon, pork amounted to 70 percent of the meat production at the end of the last five-year period. The additional feed has become scarce, the number of hogs had to be reduced by some 20,000. The time has come to emphasize cattle raising with the help of grass feeds. This is still hindered by the scarcity of feeding lots, since few of them were built earlier. The Võru sovkhos began to raise Hereford, and even though there is no profit at first, this idea should not be dropped. These calm animals "harvest" the grass necessary even from areas in abandoned villages where this went unused previously. The Herefords will contribute a certain amount of meat. But the fattening of beef animals to some 400 kilograms requires additional expenditures. Their meat is still better than that of other cattle, unfortunately this is not reflected in the procurement price. But this could lead to a disappearance of interest.

In several areas of the USSR animal proteins are produced from scrap wood through hydrolysis. Director Guido Lõokene of the Võru sovkhos together with scientists made a proposal and submitted the economic justification for building such a plant in our rayon. We support this since this way we could save on grain and produce more meat.

H. Loite: Our task is to consider the rational use of resources in every project. Is it wise to export ever more peat mulch, even though the state makes monetary allocations for this? Let's call on clover to increase ground fertility. This year we will sow it on a thousand hectares under grain, this way we also fertilize the soil; even if we produce fewer feed units at this time it will be well worth it in the future.

V. Udam: Work that is unprofitable should be left undone. In the spring of 1982 we had to plow 10,000 hectares of clay soils that were inaccessible in the wet fall. The sowing plan was met, but practically there was no harvest from there. Arnold Erm, chief agronomist of the "Edasi" kolkhoz thought that we should have left these fields lie fallow, cultivate them in the summer, and later sow winter grain or hay on them. We toiled in vain, wasted a lot of fuel. Nature often creates special situations for the farmer in which we must make the most correct decision.

**[Boldface]** The roundtable discussed how the agroindustrial associations could contribute to collective contracting in the kolkhozes and sovkhos. The production branches within the EPT have implemented self-management, this has been accompanied by a more economic use of resources. The establishment of independent departments, brigades, and family farms in the Valga, Tartu and other rayons has strengthened the workers' sense of ownership. It is important that various forms of joint labor be found and tried out, that experiences be shared and generally applied, taking into account the character and tasks of the production units. This progressive mode for labor management and stimulation must be extensively applied during this five-year period.  
**[end boldface]**

## Division of Labor Plus Trust

H. Veldi: To meet the requirements of the food program the agroindustrial combines must make better use of labor, machines, and construction resources. Dividing, specializing, and arranging for cooperation the maximum increase of production must be the ultimate aim.

After the formation of the ESSR Agroindustrial association it is especially important that the enterprises of the EPT be included directly in agriculture production. A total of 20,000 people work in them and the agroindustrial associations of the rayon must direct their work so that it will be most beneficial for production. Differing from previous practices their tasks are now assigned through the agroindustrial associations of the rayons, except for certain products intended for the entire republic and soviet agriculture.

EPT operators have assisted enterprises in field work. Perhaps kolkhoz and sovkhoz operators could be used in the winter to permit EPT to meet its tasks more successfully? The rayon agroindustrial associations must determine which jobs should remain within EPT and make their plans accordingly. This way our management becomes more flexible, the solving of daily questions becomes more effective.

V. Sartakov: There are two EPT enterprises in Rapla Rayon. It's very good that they will begin to act more efficiently to develop agriculture in their own rayon. True, we have received help from them in the past, but that was more like a favor when we needed some more complicated tools or spare parts. The official use of EPT services must raise labor productivity considerably.

H. Pöder: I am disturbed when I hear, "The EPT helps the farmer." No, it must do its job, without taking on the most convenient ones that are easier or more profitable. To the contrary—our duty is to do in our shops that what would require great toil and energy in the collectives. After all, it makes no sense to acquire expensive equipment for doing complicated work in every kolkhoz and sovkhoz. The Valga EPT took on the care and maintenance of the sedans of the agricultural specialists. This means a loss for us, but we receive thanks. Plans call for performing of the more complicated maintenance operations on large tractors.

Or let's talk about the sanitary maintenance of the farms, something that is usually entrusted to casual labor that requires much money but not always pays attention to quality. Why couldn't this be done by one organization—either the EPT or KEK [Center for Kolkhoz Construction]? This could be discussed. The barns must not only be whitewashed, doors and windows, plumbing and automated drinking troughs are awaiting care.

A. Väli: EPT enterprises have sent good operators to harvest. It would be even more important if they would take on the maintenance of the roads within an enterprise. This would mean a reduction in the maintenance expense of machines. We could hand over all the sanitary maintenance of the farms to the kolkhoz construction office.

V. Udam: The Pärnu KEK has performed maintenance in the farms valued at half a million rubles a year.

H. Pöder: The agroindustrial combine wishes that an EPT enterprise would do as much as possible for its own rayon. But taking into account specialization we must supply equipment for the agriculture of the entire republic and of the USSR. It is important that everything should be done at the right time and in good fashion to meet one's own rayon's requirements. The EPT enterprise has even before made one of a kind machines and equipment for enterprises in its rayon, it did some rebuilding work. How much of this can be done in the future depends on the attitude of the local people.

H. Veldi: It is possible to stimulate manufacture of equipment for a rayon,

H. Pöder: Apparently self-management will become even more important in the new circumstances. Everywhere money must be counted and wisely spent, and for this purpose we must bring the salary, labor productivity and profit plans to the last possible link. It is practical that the manager of this last link should have access to some part of the stimulation fund so that he could enthruse his men to perform jobs essential to the rayon quickly. As far as production lines go, there are fewer cares, since high labor productivity and a good salary are guaranteed. But a path must still be beaten for one-time jobs. A larger percentage of the EPT stimulation fund could be used here. This possibility exists and awaits skillful application. When the fulfillers of rush orders receive good pay they will be interested in exerting themselves. Of course, the bonus must always be paid fairly.

A. Väli: At the same time the EPT enterprises must not let tasks assigned by the division of labor go unfilled. EPT shops send 26 percent of their production to the other federal republics, but from the latter we receive three percent more. Collaboration on the material-technical base must continue. Lack of spare parts has been an eternal complaint. Unfortunately, we do not have an exact survey of them in our republic. At the beginning of the year the EPT bases stocked parts valued at 11 million rubles, kolkhozes and sovkhoses stored parts valued at 24 million rubles. There is no information about the latter, nobody knows in which warehouse there have been parts for years that are urgently needed in another enterprise.

H. Loite: Every enterprise stores parts, since there is no trust in the EPT's ability to deliver a new one to replace a broken part. With the formation of the ESSR Agroindustrial Association the prerequisites for overcoming this distrust have been met. We need exact data about the spare parts. In addition to the EPT procurement personnel every enterprise has 3-6 people working on procurement, depending on its wealth and managerial initiative. Often both segments are looking for the same thing, spending money and time for long trips. Is a double supply system necessary?

Up to now the managers of the agroindustrial associations had to know what machine is idle in what enterprise for the lack of what spare part. We have told the enterprises that if the EPT does not meet your order in a week you should report this to the association. This is not being done, nobody wants to get into arguments with the suppliers.

Apparently it would be wise for the association to find a person who would register and monitor all requests from the rayon to the EPT. If the supplier cannot meet the order in a week, this person will report this to the appropriate office of the ESSR Agroindustrial Association. It is not impossible that some part lacking here is stored in some other rayon, only we do not have that information.

The EPT system has sometimes gone too far in specialization, whereby the interests of the enterprises have been neglected. Rakvere men must search for all kinds of parts every day in Viljandi.

H. Pöder: The Valga EPT trucks drive almost every day during the spring sowing to Kadrina (some 250 kilometers) to obtain parts for the T-150 K.

H. Loite: When a part breaks on a tractor or combine it must first be dismantled, then we have to find out where a new one can be obtained, the old part has to be loaded on a truck and the long trip must be made. It is good if this can be done in a day; all this time a big machine is standing idle. Even a part that cannot be built must be turned in, otherwise a new one will not be issued. Isn't it time to revise these regulations?

H. Pöder: Under the new circumstances contract work can be better managed. For example, the EPT enterprise could hold a certain number of combines, we would maintain them and also find operators. In our rayon it is not practical to disperse such a team, rather it should be sent to the most needy enterprise. Working in the same place for several years our men will get to know the fields and will be able to harvest well. Perhaps it would also be wise to form a potato harvesting brigade for the Taagepera sovkhos that is under our sponsorship. We are considering this now. Such brigades are more effective than the dispatch of single men to various places for a period of time.

H. Loite: The Rakvere EPT now has 8 combines. The agroindustrial association determines the places where they will begin harvesting. This could be like a fire brigade that is dispatched where in-house resources are insufficient.

E. Saar: In our situation such a reserve is also necessary. Acting in this manner it is not necessary to dispatch good harvesters to places where the task is lagging. Usually the combine operators are drivers and tractor operators who later mount their own machines. One who has completed his harvest rapidly does not want to help the laggard, since other work awaits him at home.

#### What And How To Build In The Countryside

A. Vali: Faster measures must be taken to bring more people from the town to underpopulated areas. Even with the present quantity of feed we could produce more milk in the Haapsalu Rayon if we could find good workers for every barn. Of course we would also have to gather more valuable animal feed; this is somewhat hindered by a lack of operators.

H. Veldi: The food program says that by 1990 the number of agricultural workers in our republic will rise by 8,000. This figure will not be reached automatically; a well planned-out career counseling, as well as marked improvements in living and working conditions are necessary, otherwise people will not come from the city. To have sufficient operators and animal breeders more housing units must be built in the countryside, but other things necessary are no less important--kindergarten, school, store, clubhouse...

V. Udam: The Pärnu agroindustrial combine allocates half of the construction and installation fund for rural social development. In the years of the agriculture administration only one-fifth went for that purpose. At that time many production facilities were built. In the ninth five-year period 300 housing units were built, in the tenth period this figure doubled, with 400 being built in the first two years of the association. The goal is to build a thousand apartments in the current five-year period in the kolkhozes and sovkhoses. We will meet that goal, even though the builders at first said that the task is difficult to meet. The agroindustrial association has planned to build housing in the weaker enterprises with the help of the Pärnu KEK, the stronger enterprises have formed their own construction brigades.

Of course, the struggle continues--the builder wants to erect houses that bring him the greatest profit. Apartments and recreation facilities are naturally more bothersome. The Pärnu KEK has developed into a powerful organization and builds also in the city. Unfortunately its construction limit prevents it from expanding its rural construction.

Had we not altered the construction structure four years ago, there would be many abandoned farms in the rayon. In the Sääde kolkhoz half the pigsties are empty. The barns of the Tõstamaa sovkhos could accommodate another 400 cattle. Since there is not enough concentrated feed for poultry, there are empty duckponds in the Sindi sovkhos. As soon as one duck breeding facility has been built, another one is under way.

E. Saar: There is much talk now of the need to build one-family houses. This way we propagate a wish that we still cannot meet. The Võru KEK can build at most 20 one-family houses a year, the enterprises themselves perhaps just as many. These few houses are enough only for permanent country dwellers. For those we want to attract from city to country we can only offer an apartment in a town-like house. The housing combines of the towns should also begin to erect houses with 12 and 18 apartments; the towns, according to a directive of the CPSU Central Committee 1982 May plenum must divert 15 percent of their capital to rural construction.

But doesn't the startup take too long? The ESSR Council of Ministers has directed that the Tartu Construction Combine must build 126 apartments in our rayon during the current five-year period. These apartments are to be built in the larger settlements: Vaimela, Vastseliina, and Varstu. Unfortunately, the wish of the association to erect a house in Rõuge where labor is urgently needed was not met. But there is even doubt whether the houses

will be built in this five-year period since their sites have not yet been selected. No doubt this undertaking is of value in the increase of agricultural personnel, but more apartments are needed precisely in those areas where large houses are inadvisable architecturally.

E. Lõokene: Although apartments are urgently needed, a five-story house in the countryside is not a happy sight. The construction offices of the kolkhoz do not want to build single family dwellings because of shortages of material. When the housing construction combines start their work in the countryside they should be directed to build houses suitable for country people. It might be wise to look at what has been done by the housing construction combines of other federal republics; in some areas they build single family homes from the same parts used to build large houses.

H. Loite: In the BeSSR they have started to build shorter and lower multi-story houses in the countryside; this would be more acceptable to us than a city-type block house.

V. Sartakov: The workers of the Märjamaa sovkhos live in a township where large panel construction is appropriate. For this reason we have tried for three years to have the Tallinn Housing Construction Association build us a house with 60 apartments. Many of the township's youths would move there, and we could thus recruit them for land work. The shortage of operators is felt even now, there are nine of them per 1000 hectares of cultivated land. If we do not get the large building the number of workers will decrease even more.

H. Veldi: It is the task of the ESSR Construction Committee to determine what kind of houses are to be built where by the towns' construction combines. Undoubtedly the peculiarities of rural life and the specific characteristics of each area must be taken into account in the construction of each residence.

L. Lõhmus: In our rayon the limited capacity of the Viljandi KEK slows down the construction of both residences and other edifices; last year rural building plans were not met by a million rubles. The agroindustrial association sees one of its main tasks in assuring that the Viljandi KEK will begin to meet its plans. Up to now initiatives have had few results.

A. Väli: The lack of resources to speed social development in the Lihula area is bothersome. There was a plan to build a store in Lihula in the current five-year period, the ETKVL [Republican Association of Estonian Consumers] struck this from its plan. There are five thousand people living in the township and its vicinity.

H. Loite: The resources available in our republic must be used for the needs of agriculture. Recently I was called by the deputy chairman of the "Viru" kolkhoz--they need up to 40 tons of lime for their barns, but the allocation is only 11 tons. The mistake in lime distribution was not made in the rayon. The amount allocated to our rayon will not even meet the needs for the barns, even though builders also need lime.

H. Veldi: There are still many places lacking storage facilities, for this reason there are difficulties with preserving products, they spoil. Future plans call for more potato and vegetable storage facilities, otherwise we cannot guarantee the high quality of field products.

E. Saar: In the Võru Rayon potato sheds will be finished this year in the Vastseliina, Obinitza, Rõuge, and Misso sovkhoses. But the largest kolkhoz at Kuldre has storage space for only 300 tons of potatoes. Would it not be practical to build Quonset huts to store potatoes in South Estonia as has been done in the Põlva kolkhoz? They are easy to construct, also there would be less trouble than hauling heavy construction material from the combines of North Estonia. Storage for flax is also urgently needed, otherwise we will not profit from that culture.

#### There Must Be Common Care

H. Veldi: As the first among the federal republics the ESSR determined which agencies would belong to the agroindustrial complex. The task of the Presidium of the ESSR Agroindustrial association is the operative coordination of the entire agroindustrial complex. All the rayon agencies and enterprises belonging to the complex must be called upon to meet the food program goals.

H. Loite: The direct supervisor of some members of the agroindustrial association is in Tallinn and thus their directives are always met. But those issuing these directives sometimes do not think of the needs of the producer of agricultural products, but rather of the interests of their own system. Our association reached an agreement with the Rakvere Meat Combine to thermally treat slaughterhouse byproducts. The combine treated them until the ESSR Meat and Dairy Products Ministry forbade it. Yet it is not sensible to abandon the use of meat byproducts in hog feed, with them an additional quantity of pork can be produced. Now the byproducts are hauled from the meat combine into several enterprises and are heated there. It would be much more practical to do this in the association; we would also avoid the risk associated with hauling untreated byproducts.

E. Saar: ETKVL is a part of the agroindustrial complex and for this reason we expect deeper concern from it. In the distribution of foodstuffs the towns are in a privileged position. The countryman has to drive to Võru or Antsla when he wants to buy, let's say, cream. A specialist uses state gasoline for that purpose. Tractor operators and animal breeders can seldom get to town to look for food. Yet there are young families in the country who do not have animals, but the country store does not supply them. Such inconveniences are not due to food shortage as is sometimes thought, but to the inequity in distribution between town and country stores. The Võru Consumer Cooperative has done nothing to bring consumer goods to the farm people.

We would gladly see the ETKVL participate in the establishment of rural stores and restaurants; this has become almost exclusively the concern of farming enterprises.

V. Udam: The Pärnu Consumer Cooperative has allocated money to the funds of the combine, provided for smooth transport of goods to the farm people, and for feeding operators during high seasons. Presumably such opportunities should exist elsewhere as well.

[**Boldface**] The roundtable was unanimous that the agroindustrial combines must competently direct the application of all reserves in agriculture and strive for cooperation of the entire agroindustrial complex. In this way they can make a marked contribution toward meeting all the difficult tasks of the food program.

9240

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## AGRO-ECONOMICS AND ORGANIZATION

### PROGRESS, PROBLEMS OF SUBSIDIARY ENTERPRISES OF INDUSTRY

#### Krasnoyarsk Area Measures

Moscow SEL'SKAYA ZHIZN' in Russian 30 Apr 83 p 2

/Article by N. Tatarchuk, chairman of the executive committee of the Krasnoyarsk Kray Soviet of People's Deputies, Krasnoyarsk Kray: "Following the Example of Initiators"

/Text On Mondays the director of the Krasnoyarsk Aluminum Plant holds a meeting the agenda for which is considered to be unusual for metallurgical production. Here we have in mind the problems concerned with agricultural output and the affairs and requirements of the plant's subsidiary farm.

In June of last year, this enterprise, jointly with the collective of the Krasnoyarsk Machine Building Plant imeni V.I. Lenin, displayed some initiative: through the accelerated development of subsidiary farms, to make a substantial contribution towards solving the food program. For the 1982-1985 period, the metallurgists at KrAZ /Kremenchug Automobile Plant/ resolved to employ 4 million rubles worth of capital investments for developing the logistical base for their agricultural department and during the 12th Five-Year Plan -- 7 million rubles. The machine builders of Kras mash /Krasnoyarsk Machine Building Plant -- 7 and 5 million rubles respectively.

This initiative was approved by the party's central committee and received extensive support throughout the kray. At the present time, 95 large-scale enterprises of industry, construction, transport and other branches have adopted raised socialist obligations for the accelerated development of their own agricultural departments and for increasing the production of food goods in them. With regard to the initiators themselves, they are actively implementing their plans.

The metallurgists of the aluminum plant recently succeeded in building a cow barn for 400 head, a calf house, a milk processing point, a poultry house for 15,000 laying hens, fattening and brood stock pigsties, 24 twin-apartment houses and dormitory facilities for 120 occupants. The agricultural town of the enterprise continues to expand. Construction is underway on a kindergarten, dining hall, repair workshop, a pigsty for 1,000 head and a shop for the processing of food scraps. In the future a trade center, school and a palace of culture are to be built.

The expenditures involved are producing a considerable return. Last year the subsidiary farm of Kraz produced 158 tons of meat, 660 tons of milk and 315 tons of potatoes. The collective is confidently proceeding with its planned goal -- in 1985 to supply 400 tons of meat, 1,000 tons of milk and 3 million eggs. Accordingly an increase is taking place in the number of animals, the land areas are being expanded and the area of arable land must be increased from 853 to 3,000 hectares by 1990. All of these efforts are being actively supported by the USSR Ministry of Non-Ferrous Metallurgy.

The Krasnoyarsk machine builders are developing their subsidiary farm just as actively and purposefully.

For an extended period of time now, such subsidiary farms as Yefremkino of the Yenisey-zoloto Production Association, Saralinskoye of the URS /administration of worker's supply/ of Minlesbumprom /Ministry of the Timber and Paper Industries/, the one for the Sorsk Molybdenum Combine and others have been supplying considerable products for the dining tables of workers at their enterprises. But an extensive and purposeful program for developing the agricultural departments has been developed and in being implemented since the publication of the decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Subsidiary Farms of Agricultural Enterprises, Organizations and Institutes."

The implementation of the measures called for in this document is of special importance for the workers in Krasnoyarsk Kray. The rapid development of the region's productive forces and the formation of territorial-industrial and fuel-energy complexes and terminals have influenced the numerical growth in the municipal population and they have aggravated the problems concerned with support for it in the form of food. This is why the kray's CPSU Committee and the executive committee of the kray's soviet of people's deputies prepared an all-round program for development of the logistical base for the subsidiary farms, one which calls for meat production to be increased by a factor of 2.1, milk by a factor of 1.5 and eggs by a factor of 1.3 during this current five-year plan. Towards this end, the plans call for the use of more than 50 million rubles worth of capital investments.

Specific tasks for the production of agricultural products and for supplying the subsidiary farms with equipment and implements have been defined for each enterprise and construction project. The supplying of equipment and implements would be the responsibility of the kray production association of Sel'khoz-tekhnika and the Krasnoyarsk office of Rosglavsel'khozkomplekt. The sale of pedigree young stock for delivery to the farms is organized through gosplemob'yedineniye and the sale of seed -- through the grain products administration. Last year alone, 1,400 head of young large-horned cattle stock and hogs were sold to subsidiary farms for herd reproduction purposes and also approximately 48,000 young pigs for fattening purposes. For this year's crops, 2,300 tons of seed were allocated.

There are presently 279 subsidiary farms and points for the fattening of hogs in the kray and they have at their disposal 131,000 hectares of agricultural land, including 56,100 hectares of arable land. Last year they produced 11,500 tons of meat, 27,400 tons of milk, 52.5 million eggs, 34,000 tons of potatoes, 17,500 tons of vegetables and they thus surpassed the 1980 levels to a considerable degree. And it bears mentioning that this was achieved during

the developmental period for the agricultural departments, when many of them were still gathering strength. The effectiveness of the agricultural departments of the Yeniseyzoloto Association is especially high. For each worker, they produced 230 kilograms of milk, 69 kilograms of meat, 232 kilograms of potatoes and 100 kilograms of vegetables.

Unfortunately, not all of the departments are applying themselves to the work in this same manner. Whereas enterprises of non-ferrous metallurgy, the coal, timber and wood-working industry, the associations of Krasnoyarskgeologiya, the kray's public catering administration and a number of others have already accomplished a great deal, Glavkrasnoyarskstroy, the Krasnoyarsksel'stroy Association, the Chernogorsk Artificial Leather Combine and the Divnogorsk Plant for Low Voltage Equipment have still not become accustomed to the work.

At times, one hears references being made to shortages of material and financial resources. Experience has shown that these statements are unfounded. We are directing the collectives in a manner such that each large enterprise will have its own subsidiary farm, with smaller ones creating them on a cooperative basis. The Sukhaya Balka Hog Complex for 12,000 head, where extensive use will be made of food scraps, will be erected not far from the kray center based upon this same principle. Twenty three small enterprises of Krasnoyarsk are being built on a share basis.

It is believed that many other enterprises will follow this same path. A requirement exists merely for solving the problems which arise in a more interesting manner and for displaying thrifty enterprise and industry. This is obviously difficult work. Indeed, it involves essentially the establishment of a qualitatively new branch for the industrial enterprises, construction projects and organizations. Extreme importance is attached to ensuring that the work is not dragged out and that a rapid return is realized on the resources invested.

#### Support From Sugar Industry.

Moscow SAKHARNAYA PROMYSHLENNOST' in Russian No 4, Apr 83, pp 2-4

/Article: "Improving the Work of Subsidiary Farms"

/Text/ The food program for the USSR, approved during the May (1982) Plenum of the CPSU Central Committee, contains the statement: "For the purpose of supplementing the food resources, subsidiary farms of enterprises and organizations should be developed in all areas where conditions exist for doing so. The purpose of these farms will be to satisfy to the maximum possible degree the public catering requirements of manual and office workers for meat, milk, vegetables and potatoes."

The workers attached to the sugar industry view the decisions handed down by the party and government concerning the creation of subsidiary farms as a matter of vital concern.

As a rule, enterprises of the sugar industry are located in rural areas and since the processing of beets involves food scraps, subsidiary farms can be organized here for the fattening of large-horned cattle, hogs and for the raising of vegetables, not only for satisfying the requirements of dining halls and children's institutes for meat, milk, vegetables and other agricultural products but also for their partial sale to plant workers.

Over the past 3 years, a considerable amount of work has been carried out throughout the branch in connection with the creation of subsidiary farms. The initial organizational period is coming to a close at the present time: at 319 of 325 sugar plants there are subsidiary farms where approximately 10,000 head of large-horned cattle, approximately 1,500 head of hogs, 5,000 rabbits and approximately 20,000 poultry are being maintained. Some of the farms have hothouses for the growing of vegetables, a pond economy for the breeding of fish, apiaries and fruit and berry plantings. There is no doubt but that this year all enterprises of the sugar industry will have organized their own subsidiary farms.

In 1982 the subsidiary farms sold their initial thousands of tons of meat, milk, vegetables, hundreds of thousands of eggs and other agricultural products to public catering enterprises and also to the workers at sugar plants.

Certainly, such a quantity of products sold constitutes only a negligible proportion of the overall volume of meat, milk and vegetables sold throughout the country and yet it is a fine beginning towards partially satisfying the food product requirements of sugar plant collectives.

An analysis of the work of the branch's subsidiary farms reveals that for the most part they are small farms having a weak production base and that they are poorly supplied with tracts of land and farm buildings. In 1982, such farms operated with low production indicators. But there are fine and strong subsidiary farms, the output of which constitutes a considerable proportion of the food goods being made available for plant workers. The experience accumulated at these subsidiary farms must be studied and introduced into operations on an extensive scale at enterprises of the branch.

Such farms include the subsidiary farm of the Kandinskiy Order of the "Badge of Honor" Sugar Plant imeni 50-Letiya in the Kirghiz SSR, which was awarded a diploma of the AUCCTU and a monetary bonus based upon its operational results for 1981. Having started with only a small tract of land that was allocated for hothouse use, the subsidiary farm of this plant has presently been transformed into a large-scale agricultural department. In 1981 it supplied the dining halls, children's institutes and the enterprise's workers with 21.7 tons of meat, 119,000 eggs and 10.2 tons of early vegetables. In 1982, 300 head of hogs were maintained here on a fattening regime, there were approximately 4,000 poultry, 120 rabbits, 50 bee colonies, 4 hectares of stocked water areas and 1,800 square meters of hothouses. In addition, more than 32 tons of meat and a considerable quantity of other products were sold.

A subsidiary farm has existed since 1929 at the Gulkevichi Sugar Plant of the North Caucasus Association. During the pre-war and post-war years, it satisfied completely the requirements of the dining hall and the enterprise's entire collective for meat, milk, vegetables, fruit and melon crops.

At the present time, the subsidiary farm has 35 hectares of land areas, a cow barn for 100 head, a pig sty for 300 head, a root crop storehouse with a 150 ton capacity, a feed preparation shop and a complete set of agricultural machines. The plant's workers are being supplied with cheap animal husbandry and field crop husbandry products.

In accordance with a statute approved during a general plant meeting, the family of each member of the enterprise's collective must perform a definite amount of work on the subsidiary farm in connection with the procurement of hay, the weeding of vegetable crops and so forth. The farm is constantly obtaining high milk yields and weight increases in the young stock and this serves to lower production costs.

At the Gulkevichi Sugar Plant, in May 1982, Rossakharprom held a seminar-conference on the theme "The Development of Subsidiary Farms at Sugar Plants of the RSFSR Minpishcheprom /Ministry of the Food Industry/," during which the leaders of the enterprises exchanged experience, summarized the results and outlined the tasks for future years.

Fine work is being performed at the subsidiary farm of the 2d imeni Petrovskiy Sugar Plant of the Kirovograd Association, which sold 52.3 tons of meat, including 7 tons of pork in 1982.

Great successes have also been achieved by the subsidiary farms of the Barskiy, Yaltushkovskiy, Nemirovskiy, imeni Gazeta Pravda, Dolinskiy, Ol'shanskiy, Salivonkovskiy, Voronezh, Matusovskiy, Zolochevskiy, Dinskiy, Timashevskiy (North-Caucasus Association), Tovarkovskiy, Erti'skiy and imeni Kalinin Sugar Plants. Mention could also be made of a number of other farms of the RSFSR Minpishcheprom and Minpishcheprom for the Ukrainian SSR which this year made a considerable contribution towards improving the supply of food products for the dining halls, children's institutes and enterprise workers.

However, the necessary measures must be taken to eliminate the substantial shortcomings which exist in connection with the organization and development of the subsidiary farms of sugar plants.

For example, many farms lack the land area required for the raising of vegetables and potatoes and also forage crops for satisfying the requirements of animal husbandry. Thus for these purposes they are restricted to using small tracts of land intended for the storing of beets or for filtration fields.

The decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Subsidiary Farms of Enterprises, Organizations and Institutes, adopted in December 1978, sets forth a complex of measures for promoting the organization and successful development of these farms. In particular, an instruction has been handed down to the local soviet organs calling upon them to allocate the necessary land tracts for the subsidiary farms of enterprises. And positive results are being achieved there where the leaders of the sugar plants and associations display proper concern for ensuring that the subsidiary farms are provided with tracts of land.

For example, in May 1982 the Voronezh Production Association of the sugar industry was authorized by the oblast executive committee to allocate 355 hectares of land area for subsidiary farms of the association, including for sugar plants: Gribovskiy, Olkhovatskiy, Pereleshinskiy, Sadovskiy, Georgiu-Dezhskiy -- 50 hectares each, Ramonskiy -- 40 hectares, Khokhol'skiy -- 25, Erti'skiy and Kalachyevskiy -- 15 hectares each of arable land.

Many such examples can be cited.

However, there have been instances of enterprise and association leaders complaining over shortages in the land areas being made available, while at the same time they are failing to undertake the proper measures aimed at solving this problem in the established manner. Such situations can no longer be tolerated.

Other substantial shortcomings in the work of many subsidiary farms include a low level of agricultural practice in the sowing and cultivation of grain crops and great losses in the harvesting of these crops, resulting in low grain yields. For example, in 1982 the average cropping power for grain crops at farms of the Khmel'nitskiy Association was 3.5 quintals per hectare, the Sumy Association -- 3.7 quintals per hectare and for the sugar plants of Minpishcheprom for the Kazakh SSR -- 1.7 quintals per hectare.

The successes achieved by a subsidiary farm are determined to a considerable degree by the quality of the livestock raising and fattening operations. Fine weight increases are obtained on those farms where efficient use is made of the available feed resources, where the maintenance of the livestock is organized well and where the feed ration is being upheld. Thus in 1982 at the subsidiary farm of the Pervomayskiy Sugar Plant of the Odessa Association, the average daily weight increase in large-horned cattle assigned for fattening was 530 grams, hogs -- 458 grams and the production cost for 1 kilogram of weight increase -- 91 and 98 kopecks respectively. Within this same Odessa Association, a farm of the Kotovsk Sugar Plant obtained an average daily weight increase in large-horned cattle of 420 grams and in hogs -- 280 grams. The production cost for a kilogram of weight increase was 2 rubles and 70 kopecks and 1 ruble and 20 kopecks respectively.

On the average, for subsidiary farms of the Kharkov Association, the average daily weight increase for hogs was 270 grams and the production cost for 1 kilogram of weight increase -- 2 rubles and 40 kopecks.

At the Kupyansk Sugar Plant the weight increase was 191 grams and the production cost for a kilogram of weight increase -- 2 rubles and 95 kopecks, that is, considerably greater than the existing retail price for meat in the trade network.

It is clear that with such unsatisfactory organization of livestock fattening operations it will be difficult to lower the cost of public catering at a sugar plant.

At a number of subsidiary farms, the maintenance of the livestock and veterinary services have been organized in a very poor manner and this is causing great losses in the number of animals. For example, at the subsidiary farm of the Dzhabul Sugar Plant of the Minpishcheprom for the Kazakh SSR, the livestock losses in 1982 amounted to approximately 30 percent of the overall number of offspring and at the Aleysk Sugar Plant of the Altay Production Association -- approximately 25 percent.

The leaders of the sugar plants and the workers attached to the administrations and associations of the sugar industry are obligated to eliminate the existing shortcomings in the work of the subsidiary farms, raise the cropping power of the grain and vegetable crops considerably this year and also increase the

productivity of animal husbandry. The problem of improving the work of this important department of an enterprise must constantly be the object of attention by the party, komsomol and professional trade union organizations.

The operational experience of the leading subsidiary farms of our industry and also other branches of the national economy must be made available to each sugar plant.

To produce as much meat, milk, vegetables, potatoes and other products as possible in the interest of satisfying the requirements of public catering, children's institutes and also the enterprise's workers, to obtain more vegetables, potatoes and grain crops from each hectare of sowing, to achieve high weight increases for the animals assigned to fattening regimes, to lower production costs and, as a result, to lower the cost of public catering -- these then are the more important tasks in the work of the subsidiary farms of sugar plants.

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7026

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BELORUSSIAN EXPERIENCE IN RAPO DEVELOPMENT, PROPOSALS FOR SYSTEM IMPROVEMENT

Moscow VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI in Russian No 5, May 83 pp 76-87

[Article by N. F. Prokopenko, doctor of economic sciences, and V. F. Tarasevich and V. V. Leshkevich, candidates of economic sciences, Belorussian Scientific Research Institute of Economics and Organization of Agriculture--BelNIEOSKh: "The Rayon Food Program and Measures for Its Implementation"]

[Text] The USSR Food Program is a principally new step in the system of our planning and in the administration of the socialist economy. On the basis of a special-purpose, comprehensive approach, it combines all spheres of the agro-industrial complex in order to achieve a common final goal--to produce high-quality food products and to deliver them to the consumer [4].

Taking these requirements into account, a food program was developed for the Belorussian SSR for the period up to 1990. The program envisions increasing the productivity of grain crops in the republic by 6-7 quintals per hectare during the decade, and increasing it to 28-29 quintals per hectare by 1990, increasing the average annual grain production under the 11th Five-Year Plan to 7.8-8.1 million tons, and under the 12th--to 8.2-8.6 million tons, increasing the average annual meat production (in slaughtered weight) to 1 million and 1.1-1.2 million tons, respectively, and increasing milk production to 6.5-6.7 million tons and 6.9-7.0 million tons, respectively. During the course of the two five-year plans it is intended to increase the per capital consumption of meat and meat products (translated into meat) from 63 kilograms in 1980 to 67 kilograms in 1985 and to 76 kilograms in 1990 [5].

What measures are necessary for fulfillment of the tasks that have been set? Above all, mandatory disclosure and utilization of potential economic and organizational-technical reserves for increasing the fertility of the land and more efficient utilization of labor resources and fixed and circulating capital.

The collectives of many agricultural and industrial enterprises of Belorussia already have scientifically substantiated plans for economic and social development and are successfully implementing them. But planning at the level of the enterprise increasingly frequently encounters problems that go beyond the framework of the competence and capabilities of the administrative agencies of one farm. Thus the funds that can be allotted by the board of the kolkhoz or the directors of the sovkhoz in order to increase the professional skills of

personnel, improve working conditions and other measures that are included in the plan depend on the introduction of new technical equipment and deliveries of construction and other materials. If the higher department has not planned for their delivery to the farm, these or other points of the plan will not be fulfilled. This is especially manifest when changing production over to comprehensive mechanization and automation and introducing progressive technologies in farming and animal husbandry. It also happens that because of limited finances the farm alone cannot handle the construction of large cultural-domestic and production facilities. In this respect too the plan should be considered from all sides and coordinated with soviet and economic agencies when it is necessary to fulfill it through combined efforts.

In recent years in Belorussian agriculture there has been a deepening of diversion of labor, which has led to creating specialized enterprises and singling out new kinds of productions that are related to serving the kolkhozes and sovkhoses and processing their products. At the same time there is a stronger interdependency between agricultural and industrial enterprises. Under these conditions the rural rayon is becoming a most important economic unit, within the framework of which close production interrelations are taking form among all autonomously financed enterprises. But until recently the agricultural, processing and service enterprises located on the territory of an administrative rayon were separated organizationally and departmentally. The coordination of their activity and efficient utilization of resources were greatly complicated and there was a limited possibility of increasing the efficiency of public production. Taking this into account, there arose a need to improve the production and economic ties among agricultural, processing and service enterprises and organizations within the framework of the administrative rayon. In the modern stage the formation of rayon agro-industrial associations is contributing greatly to the success of this integration.

In keeping with the standard provisions concerning the rayon agro-industrial association [67], it is to include, under the established policy, kolkhozes, sovkhoses, interfarm enterprises (organizations) and other enterprises and organizations of the system of the USSR Ministry of Agriculture, the USSR Ministry of the Fruit and Vegetable Industry, the USSR Ministry of Procurements, the USSR Ministry of the Meat and Dairy Industry, the USSR Ministry of the Food Industry, the USSR Ministry of Land Reclamation and water management (except for enterprises for constructing water management facilities that are included in the oblast, kray, republic (ASSR) agro-industrial association), the USSR Ministry of Agriculture, the USSR Goskomsel'khoztekhnika and the USSR State Committee for Forestry.

In connection with the formation of the national economic agro-industrial complex, the interbranch approach to planning the development of the agricultural sphere of the economy becomes stronger. And this requires, in addition to drawing up plans for economic and social development of kolkhozes, sovkhoses, industrial enterprises and organizations, a changeover to similar planning on the scale of the rayon agro-industrial associations. The RAPO is called upon to contribute to proportional development of the branches of material production and the nonproduction sphere, to select directions for most efficient utilization of natural and labor resources, and to eliminate the contradictions and shortcomings that arise as a result of a lack of coordination in the activity

of the enterprises, institutions and other structural subdivisions that are on the territory of the rayon. All this will contribute to such necessary coordination work which is directed toward providing enterprises, especially agricultural ones, with a skilled labor force, overcoming the social differences among labor collectives in a planned way, halting migration flows from the country to the city, and creating conditions for highly productive labor and good recreation for the workers.

Thus the rayon agro-industrial complex is singled out as an independent object of planning and administration which creates favorable conditions for an effective combination of territorial, branch and special-purpose-program planning. This is shown by the experience in preparing and implementing the plan for economic and social development of the Vileyskiy agro-industrial complex in Minsk Oblast during 1981-1990, a most important constituent part of which were scientifically substantiated measures for fulfilling the rayon's food program [37].

The plan was developed in several stages. First a working group was created and the responsibilities of each of its members were determined. It included workers of the Vileyka Gorkom of the Communist Party of Belorussia, specialists in agricultural administration and capital construction, the planning commission of the rayispolkom, institutions of culture, daily life, trade, public health and education, enterprises and organizations for material and technical support and production service for agriculture, rural construction organizations, enterprises of the processing industry, the land reclamation service and communications, the road repair and construction administration and scientific workers of BelNIIEOSKh. The group developed and approved the structure of the plan, earmarked the parties responsible for the development of each section and determined the time periods for carrying out the development and the overall policy for gathering materials. In particular, the gathering of initial information was done on the basis of bookkeeping and statistical accounting. Materials from questionnaires and public opinion studies (the value orientation of the kolkhoz and sovkhos workers, the way they utilize their free time, reasons for moving, the existing interrelations in the labor collectives and so forth) were also utilized. Then, on the basis of the data that were obtained a draft of the plan was drawn up, which after consideration at enterprises of the agro-industrial complex was considered and approved by a session of the rayon soviet of people's deputies. This document was developed in keeping with the adopted methodology for national economic planning for all the enterprises and organizations of the rayon agro-industrial complex, regardless of their departmental jurisdiction. Its main long-range indicators were determined on the basis of a generalization of the plans of the enterprises and organizations of the rayon.

The agro-industrial complex of Vileyskiy Rayon is a fairly complicated production and economic formation which consists of 46 enterprises and organizations. They include 15 kolkhozes, 11 sovkhoses, 4 enterprises for processing agricultural products, 4 construction organizations, enterprises of the rayon associations of Belsel'koztekhnik and Belsel'khozkhimiya, and 10 other service enterprises. Each year the rayon agro-industrial complex produces an average gross output of approximately 80 million rubles, which comprises almost 70 percent of the overall production in the rayon.

When preparing comprehensive measures for implementing the Food Program it was taken into account that they amount to various means of solving problems of economic and social development of all enterprises and organizations that are included in the agro-industrial complex. Therefore, it was formulated taking into account and on the basis of planning materials that were drawn up in the structural subdivisions. Still, the comprehensive program is not the sum of the plans of individual enterprises, since their production activity is interconnected and coordinated within the framework of the agro-industrial complex. And this is very important since until recently the enterprises of the rayon level, for example Sel'khoztekhnika, Sel'khozkhimiya, Sel'khozenergo and others drew up their own long-range development programs separately, which led to inefficient utilization of material and monetary funds and labor resources, and strengthened departmental interests. Almost everywhere in Belorussia each rayon organization constructed for itself small boiler and repair shops, housing-municipal facilities and other objects, even though such a practice could in no way be justified economically. The same thing took place in Vileyskiy Rayon. The dispersion of capital investments impeded the creation of modern production and cultural-domestic facilities there and became a serious barrier on the path to comprehensive socio-economic development of the rayon. During the course of drawing up the long-range program for the development of the economy of Vileyskiy Rayon, it was necessary to discover the real reserves of field work and animal husbandry, and the concrete possibilities for improving the conditions for the labor of the rural residents. Calculations showed that there are such reserves, and a good deal of them. Their realization will make it possible as early as 1985 to increase the production of milk, for example, to 53,000 tons, and meat--12,000 tons. The gross grain yield in 1990 will have increased 1.5-fold as compared to 1980, potatoes and long-fibered flax--1.6-fold, milk--1.3-fold, and meat--1.5-fold. Milk production per 100 hectares of agricultural land in the rayon will reach 637 quintals and meat--148 quintals.

The volumes of production of agricultural products in the rayon are determined on the basis of unconditional fulfillment and overfulfillment of the plans for their procurements in the established assortment. The gross output is calculated in comparable prices for all categories of farms, singling out products of crop growing and animal husbandry. The planned volumes of their production have been established on the basis of indicators approved by the directive agencies for the procurements of products, taking into account their intrafarm consumption and the possibilities of overfulfilling the established plans. When determining measures for fulfillment of the Food Program in the rayon, the most important planning indicators have been coordinated with the corresponding data of the oblast. The strengthening of both intrabranh (interfarm cooperation in animal husbandry, feed production and so forth) and interbranch ties (integration which embraces kolkhozes, sovkozoes and industrial enterprises for processing agricultural products, enterprises of Sel'khozkhimiya and Sel'khoztekhnika, land reclamation and construction organizations, and so forth) have been taken into account.

Technological discipline will be significantly strengthened through more extensive utilization of a comprehensive system of control of the quality of labor and products. Experience in its application on the Stayki sovkhos and

Research conducted by the BelNIIEOSKh showed that the main shortcoming of the existing system of administration in the rayon was the imperfection of the organizational structure and a certain limitedness of the functions of agricultural administration of the rayispolkom. It did not fully coordinate the work of other departments and organizations that had become part of the rayon agro-industrial complex, it did not have centralized material incentive funds, and it was not responsible for the state of affairs in the branches, not only actually but also legally.

Of the 11 sovkhozes in Vileyskiy Rayon only 3 were directly under the jurisdiction of the agricultural administration, and the rest were under the jurisdiction of 6 republic and oblast trusts and associations. The departmental separation significantly complicated the administration of the branch and led to unnecessary coordinations, which reduced the efficiency of production. Outside the sphere of influence of the rayon agricultural administration there were also organizations and enterprises that serve agriculture and process agricultural raw material (the rayon Sel'koztekhnika, construction and land reclamation organizations, and oil and mixed feed plants). Neither the level of development nor the effectiveness of the production of agricultural products had any effect on the results of their activity.

All these services were under the jurisdiction of various ministries and departments, and the evaluation of their work did not depend on the final results of agricultural production. Frequently they received incentives for the fulfillment of their own plans while the rayon did not keep up with plans for the production and procurement of product. This led to asynchronism in the work of administrative units, and many important problems in the development of agriculture were not resolved comprehensively or with sufficient economic analysis and prognosis of the return from the measures conducted in the branch. Intradepartmental interests in the sphere of service frequently led to results which stood in opposition to the interests of the kolkhozes and sovkhozes.

The organizational separation also led to confusion in the material and technical supply for the farms. For example, tractors and combines were delivered to specialized sovkhozes under orders from trusts, and agricultural machines and means of technical servicing--under orders from the rayon agricultural administration; spare parts, coal and fuel and lubricants were delivered under orders from Sel'koztekhnika.

Thus the administration of the kolkhozes, sovkhozes and service organizations was dispersed among various departments. The technological chain--production of raw material--service of kolkhozes and sovkhozes--procurement--storage--processing--turned out to be broken up by enterprises that operate according to various legal norms. As a result of this, at the juncture of the production units there was an organizational lack of coordination and a lack of correspondence of economic interests. The service enterprises that had been separated from agriculture developed more rapidly because of a number of factors. Having concentrated specialized equipment, materials and spare parts there, they could sometimes dictate their own conditions to the kolkhozes and sovkhozes. In the situation that had arisen there was a clear need to create a rayon agro-industrial association (RAPO).

other farms of the rayon shows that this is a reliable instrument for improving the quality of labor. Under the 11th Five-Year Plan scientists of the BelNIIEOSKh and farm specialists are jointly developing a comprehensive system for control of the quality of labor and products of the RAPO, which embraces all enterprises and organizations included in the association. The system will provide strict normatives for technological processes in the production of products, planning, analysis, bookkeeping and material and technical support. The standards that have been developed by the institute and undergone experimental testing for technological processes and the functional activity of the services for planning and administration will be increasingly applied in practice and will essentially raise technological, planning-financial and service discipline.

The program envisions measures for introducing the brigade (collective) contract and comprehensive mechanization in farming and animal husbandry. With the construction of animal husbandry complexes and machine yards, it is earmarked to have mandatory construction of houses of animal husbandry workers and machine operators where there are to be rooms for resting and showers. The production building will be constructed with ventilation, heating, convenient lighting and layouts that take aesthetic requirements into account.

With the development of mechanization and automation of production and more efficient utilization of land and fixed and circulating capital, the gross agricultural output will increase by 23.6 percent during 1981-1990; the sum of profit on the kolkhozes and sovkhoses will reach 12 million rubles by 1990 as compared to 3 million rubles by 1980; and profitability will amount to 23 percent.

One of the most important tasks set for agriculture and other branches that are part of the agro-industrial complex is to reliably preserve and process the crops that have been harvested and promptly deliver the products to the consumer. ". . . It is difficult to imagine," it was emphasized at the 26th CPSU Congress, "an effective agro-industrial complex and a modern rural village without a developed network of roads, reliable transportation, elevators, storehouses, warehouses, refrigeration facilities and packaging. Disorder or arrears in any of these areas are inevitably reflected in the quantity and quality of the final product" [2].

In keeping with the Food Program for Vileyskiy Rayon, it is planned to construct new and renovate existing storehouses and warehouses on the kolkhozes and sovkhoses, and to install additional refrigeration capacities at the oil plant and other enterprises involved in the processing, sales and storage of agricultural products.

It is impossible to increase the efficiency of agricultural production without substantiated rates of development of enterprises and spheres that are included in the agro-industrial complex and significant improvement of its structure and interbranch and branch proportions. Therefore in Vileyskiy Rayon it is intended to develop industrial enterprises for processing agricultural products, rural construction organizations, rayon Sel'khoztekhnika and Sel'khozkhimiya associations and enterprises of the land reclamation service. The average annual value of their fixed industrial production capital will increase from 18.3 million rubles in 1980 to 27.5 million rubles in 1990. There is to be considerable

growth of the volumes of production of industrial enterprises. At the mixed feed plant, for example, the volume of the gross output as early as 1985 will amount to 5.7 million rubles.

It is planned to continue technical re-equipment of construction organizations, for which they will be provided with highly productive machines and automotive transportation; it is intended to increase the supply of mechanized instruments and means of mechanization for the workers and to reduce manual labor in construction by 19-21 percent under the 11th Five-Year Plan.

The efficient activity of enterprises and organizations of the agro-industrial complex is determined largely by improvement of the system of economic levers and the entire autonomous financing mechanism. Under the conditions of the functioning of the RAPO, with centralization of resources, it is necessary to preserve and develop the initiative and the material motivation of farms and enterprises that are included in it; to equalize the possibilities of development of the kolkhozes and sovkhoses that have different natural and climatic conditions; and to strengthen the mechanism of economic responsibility of the farms for efficient utilization of land, material and labor resources.

For more effective and efficient utilization of financial resources, centralized funds have been created in the RAPO for the development of enterprises, socio-cultural measures, housing construction and material incentives. For each fund the association annually draws up an estimate of expenditures, which is approved by the council of the association. The sources of money used for the formation of funds will be, on the one hand, deductions from the kolkhozes, sovkhoses and other enterprises and organizations that are part of the RAPO, using similar funds of their own and, on the other, credit from the USSR Gosbank and USSR Stroybank, which are allotted to the kolkhozes, sovkhoses and other enterprises and organizations for the construction of facilities on an interfarm basis. It is stipulated that the RAPO will distribute the limits of capital investments and material and technical resources allotted for the kolkhozes and sovkhoses and redistribute 10-15 percent of these funds among enterprises and organizations that are part of the association. This will make it possible to concentrate material, labor and financial resources for efficient management of the entire technological chain of producing foodstuffs and to purposively carry out the production-economic and social tasks.

At one time Vileyskiy Rayon had a small-village system of population, which has mainly remained up to the present. By the beginning of 1983 there were 428 rural population points here with an average of 115 residents in each. The proportion of villages with up to 50 residents is 41 percent, from 51-200--44.4 percent, from 201-500--12.6 percent and more than 500--2 percent. The transformation of the historical small village system of rural population took place until recently on the basis of the development of promising villages and the curtailment of small ones that were not promising. But as this concept was realized many unforeseen problems appeared, which were difficult to resolve.

This is shown particularly by the experience in comprehensive experimental-demonstration construction that has been carried out since 1967 on a number of farms of Belorussia. During the course of the experiment they comprehensively checked planning decisions for the organization of population points and

production zones, developed the most efficient types of residential buildings and public buildings, and worked out the best variants for engineering support and the building up of rural villages. But one of the main tasks--efficient resettlement through the construction of central future villages and the movement of small population points to them--remained unsolved. Small villages that are not well arranged continue to exist. Despite the fact that the number of population of the experimental villages increased, on the so-called unpromising villages of these farms the number of residents remained the same. It was mainly people who came from other rayons, oblasts and republics who settled in the new experimental villages, and the number of people who moved under the planned policy from nonpromising villages was very small. The number of rural population points, which decreased from 1959 through 1982 by more than 8,400 in the republic, decreased mainly as a result of incorporating small settlements and villages that were adjacent to promising ones and giving them the same name, including many settlements within the limits of cities. Only about 1,500 population points were settled collectively under the planned policy.

All this shows that so far neither the economic nor the social conditions exist for mass resettlement of the rural population from villages with no prospects to the future to those that have them. Therefore it has become outdated to divide rural settlements into those with and without prospects for the future, and this does not correspond to the modern tasks facing agriculture.

Villages without prospects for the future which are to be gradually evacuated are not the same in terms of socio-economic and demographic characteristics, the economic and geographic situation of relatively large centers and transportation communications with large villages. Within metroplexes, for example, there are many small villages which instead of dying out are developing successfully and growing. It is no accident that accelerated resettlement and elimination of a considerable number of villages on remote farms and rayons in a number of places has only increased the migration of the rural population to the cities and led to premature curtailment of private subsidiary farms.

The main directions in updating rural settlements and restructuring villages in Vileyskiy Rayon are:

a gradual changeover from the historical small-village population to consolidated population points--centers of the production-economic and cultural-daily life in rural areas;

the creation of well-arranged consolidated villages mainly through renovation of villages and concentration of residential, cultural-domestic and production construction here;

deepening of specialization and interfarm cooperation of the kolkhozes and sovkhozes, and the development of agro-industrial integration and concentration of enterprises of the processing industry in rural areas;

the location in the central villages of the farms of social and service institutions for which there is a daily and periodic demand. The radius of walking distance to institutions that are used daily should not exceed 800 meters and those that are used periodically--2.5 kilometers; and the accessibility by transportation should not exceed 30 minutes;

the preservation of small villages and maintenance of normal living conditions in them through allotting some of the public funds and the private funds of the population for these purposes;

accelerated development of the transportation infrastructure in rural areas, increased density of the network of paved roads and the development of stable communications between rural villages and the cities.

In terms of production and service functions all the population points of the rayon (with the exception of Vileyka) in the unified system of resettlement have been divided into three types.

Support (interfarm) points play a role in the economic and cultural-domestic subcenters of the rayon. Concentrated in them are enterprises for processing agricultural products and their branches, transportation routes, large service institutions for which there is periodic and episodic demand (houses of culture, trade centers, rural houses of daily life), section hospitals with polyclinics, secondary schools, baths with mechanized laundries and sports facilities (swimming pools, gymnasiums, and stadiums with a complete selection of playing areas).

Centers of kolkhozes and sovkhoses. In them are located production and economic complexes of the kolkhoz or sovkhos, and cultural-domestic facilities for daily and periodic use that serve the population of the adjacent settlements and villages. They include clubs, trade centers with stores that have goods that are in daily demand, dining rooms, medical-obstetrical points, general educational schools, comprehensive receiving points for consumer services, combines for municipal services, and so forth.

Population points for functional purposes of an agricultural and nonagricultural profile. Here the cultural and domestic services for the population which are in daily and periodic demand are mainly organized with mobile means (mobile stores, mobile shops and barber shops) and, if necessary, stores, children's day nurseries and kindergartens, and baths are constructed.

On the territory of the rayon there are 370 small villages, some of which are brigade centers of kolkhozes and sovkhoses. Social progress is called upon to improve the living and cultural-domestic conditions of all rural residents, and not only those who live in large villages. There is no doubt that this means that in all the population points, regardless of their size and functions in the system of rural resettlement, identical complexes of enterprises and institutions of the sphere of culture and daily life will be created. In connection with the intensive development of road construction and transportation, the improvement of communications between cities and villages, the development of various types of rural population points and the strengthening of their interconnections, residents of small villages will be able to take advantage of the services of cultural and domestic institutions that are located in nearby cities and in large and medium-sized villages. At the same time small population points should be constantly built up.

An important area for improving the social infrastructure of rural areas, as was pointed out in the decree of the CPSU Central Committee and the USSR Council of Ministers, "On Measures for Further Improving Housing, Municipal-Domestic and

Socio-Cultural Conditions for the Life of the Rural Population," which was approved by the May (1982) Plenum of the CPSU Central Committee, should be a considerable increase in the volume of housing, municipal and cultural-domestic construction, the development of cooperative and individual housing construction, the creation of conditions for retaining personnel in rural areas, considerable improvement of cultural-domestic, medical and trade service for the rural population, and also accelerated construction of roads on the kolkhozes, sovkhozes and other agricultural enterprises [4].

When carrying out these tasks, with the selection of efficient ways of developing the social infrastructure, it is becoming increasingly obvious that the departmental approach to the development of consumer services, culture, trade and public health is groundless. There is now a need to form a unified sphere of the social infrastructure for rural areas, and only with this approach is it possible to create conditions for a more efficient utilization of cultural-domestic and other institutions and to bring the possibilities of their rendering service to the rural population closer to those of the urban population.

In rural areas of Vileyskiy Rayon in 428 settlements there are 5 houses of consumer services and 31 comprehensive receiving points, which is clearly inadequate. In keeping with the plan for economic and social development of the rayon agro-industrial complex, by 1990 it is intended to construct another 6 houses of consumer services and 4 laundries. The general educational and skill level of workers in the sphere of services will be raised, and the practice of defect-free repair work will be applied.

Trade service for the rural population will also improve. By 1990 in a number of population points it is planned to construct modern enterprises for trade and public catering, to expand and renovate existing stores and dining rooms, and to mechanize labor-intensive processes in wholesale and retail trade. In the future all trade enterprises will be changed over to the method of self-service. Every food store will be supplied with refrigeration equipment. By the end of the 11th Five-Year Plan retail commodity turnover in state and cooperative trade will have increased by 25.1 percent as compared to 1980, including 25.3 percent in consumers' cooperation.

An important place is allotted to improving the cultural service for rural residents. By 1990 it is intended to construct and renovate 12 rural houses of culture to accommodate 2,900 in the rayon. Centralization of club institutions and the creation of socio-cultural complexes will continue. The main objects of the cultural service here will be not the village or groups of villages that are located in the club's zone, but the total social organism--the kolkhoz or sovkhoz with all of its subdivisions and population points, and sometimes the territory of the rural soviet. Socio-cultural complexes combine the possibilities both of clubs and of enterprises for consumer services, trade, public catering, public health, training institutions and so forth. The creation of socio-cultural complexes will improve the overall tone of cultural life in rural areas, and clubs for special interests will operate here as will amateur associations.

This is shown by the work experience of the Narochanskiy socio-cultural complex (Vileyskiy Rayon), which was created on the Kolkhoz imeni XXI s"yezd KPSS. Its combined cultural institutions, a secondary school, enterprises of consumer services, trade and public catering, and social organizations for aesthetic education of the workers. The social council directs the work of the agitation collective, the house of culture and the trade and consumer services. Children's institutions and the organization for prevention of legal violations are under the constant attention of the council. Operating successfully are the Yalinka national puppet theater, an art studio, a bayan orchestra, a chorus and other groups. In 1982 the socio-cultural complex conducted more than 400 different measures. Each rural resident visits his club up to 20 times during the course of the year, while the average for the republic is no more than 10 times.

Significant changes will take place in the development of the network of general educational schools in Vileyskiy Rayon. By 1990 it is planned to construct 4 secondary schools to accommodate 1,960 and 2 eight-year schools to accommodate 384, using state capital investments. Local sources and funds of the kolkhozes and sovkhoses will be used to construct 17 children's day school-kindergartens to accommodate 860. By 1990 the provision of children's institutions will almost double as compared to 1981.

A large construction program is to be completed in public health. By 1990 it is intended to put into operation a rayon polyclinic, outpatient medical facilities in the villages of Naroch', Vyazyn', and Luyban', and a section hospital in the village of Dolginovo, and major renovation is to be carried out on 4 section hospitals and 8 medical and obstetric points. The first aid system will be developed.

Rural residents are seriously concerned about the poor condition of the local road network. In one of the questionnaires distributed in the rayon the following entry was made: "We love to work well, but we want to play well. To go to the club means to get dressed up. But what kind of shoes should we wear: boots or rubber galoshes; for after a rain you cannot step outside the door without boots--there is mud everywhere. And it is no easier in dry weather: when a truck passes so much dust is raised that you cannot get your suit clean afterwards." Unfortunately, a considerable proportion of the roads, especially local ones, in the rayon are in poor condition. About half of them need radical renovation. More than 600,000 rubles are being allotted for road construction under the 11th Five-Year Plan, and under the 12th--almost 1 million rubles. In the future the entire road network of the rayon will be under the jurisdiction of the Vileyskiy repair and construction administration (DRSU). It is intended to organize road repair points (DRP), each of which should serve 100 kilometer of roads.

In the long-range program for the development of the agro-industrial complex special attention has been devoted to providing the farms with skilled labor force and utilizing it efficiently. The shortage of labor resources on the majority of kolkhozes and sovkhoses has been brought about mainly by the unjustifiably intensive migration of rural residents to the cities. From 1965 through 1981 the rural population of the rayon decreased by 27.6 percent, mainly because of youth, which increased the demographic aging of the villages and led

to certain difficulties in providing the kolkhozes and sovkhoses with personnel. Although during the past 3 years about a thousand machine operators have been trained, on a number of farms there are still not enough of them. Retaining personnel in animal husbandry is also a source of concern.

What are the main reasons for migration from Belorussian villages? The poorly arranged life, not enough free time and sometimes poor organization and conditions for labor. Most frequently the machine operators have expressed dissatisfaction with the nonnormed working day (19.6 percent of the overall number of those questioned referred to this factor), the poor organization of labor and sanitary-hygienic conditions for work (15.2 percent), the lack of shift work (13 percent), and the temporary nature of work, the lack of uniformity of the amount of work throughout the year and the physically difficult work (27.4 percent).

Some of the rural residents gave as a reason for migration the great distance from the place of work to the residence, the lack of the possibilities for family members to be employed in their specialty, poor transportation to other population points, and the shortage of the necessary goods in rural stores.

Because of this the rayon food program has reflected concrete measures for regulating migration processes, training skilled personnel, providing occupational orientation for youth and retaining them in the rural areas. In particular, a broad program has been earmarked for housing, cultural-domestic, road and production construction. Beginning in 1982 up to 32 percent of all capital investments have gone for the development of the social infrastructure. Using funds from the kolkhozes and sovkhoses, during the 11th Five-Year Plan it is intended to construct 34,100 square meters of dwelling space and to lay 25.8 kilometers of sewage pipes and 11.9 kilometers of running water lines with water fountains; and under the 12th Five-Year Plan these figures will be 39,800 square meters, 96.7 kilometers and 80.4 kilometers, respectively. In 1990 the overall area of dwelling space per rural resident will increase to 20.4 square meters as compared to 15.7 square meters in 1980. Well-planned residential buildings in rural areas will have garden plots, outbuildings for cattle and poultry, and garages for private transportation.

A large amount of attention has been devoted to the labor and creative activity of rural residents, to improving the effectiveness of socialist competition, and to improving ideological-educational and political work in all collectives. Under the conditions of the functioning of the RAPO, favorable possibilities are created for considerably improving the ideological-political education of the workers, and profoundly and convincingly clarifying and demonstrating the feasibility and importance of fulfilling the Food Program.

In keeping with the decisions of the 26th CPSU Congress concerning the need to restructure many sections of the ideological work, the Vileyka city committee of the Communist Party of Belorussia has developed and recommended to local party organizations for introduction a comprehensive structure for the administration of ideological-educational work. The practice of party organizations of the Stayki sovkhos, the Borets and Rassvet kolkhozes, and others shows that this produces good results.

Measures for the development of the rayon agro-industrial complex, after they are approved, are rapidly implemented. Interfarm associations have already been created and animal husbandry has been changed over to an industrial basis. Each agricultural enterprise has constructed new dairy farms for 400-1,000 head and fattening facilities with the latest technology. On the Kolkhoz imeni Kirov a complex for raising 1,500 noncalfing young cows has gone into operation. It delivers highly productive animals to the other farms of the rayon. A plant for full-ration feeds with a capacity of 25,000 feed units per year is also being constructed here. On the Bol'shevik kolkhoz and the Vyazyn' sovkhov there is progressive technology in operation for final fattening of livestock, and on the Kolkhoz imeni XXI s"yezd KPSS--a hog raising complex which produces more than 12,000 piglets a year.

Industrial processing of agricultural raw material is being ever more widely developed in the rayon, which contributes to the retention of personnel and the growth of the economies of the farms. The material and technical base of construction and land reclamation organizations, rayon enterprises of Sel'khoztekhnika and Sel'khozkhimiya and other structural formations of the RAPO are becoming stronger.

Rural population points are being built up. According to the results of the jury of the permanent all-union review-competition for the best building up and arrangement of villages during 1981, a Diploma of Honor of the Exhibition of the Achievements of the National Economy of the USSR was awarded to the village of Lyuban', a Diploma of the Exhibition of the Achievements of the National Economy of the USSR of the Second Degree--to the village of Narochny, and a certificate of the jury of the all-union review-competition--to the city of Lyudvinovo. Conditions for the labor and life and cultural service for the population are improving. In a word, everything possible is being done so that the life and labor of the rural residents will give them pleasure.

Still there are problems that must be solved on the path of strengthening the effectiveness of the RAPO. We are speaking primarily about the imperfect economic relations between partners from various branches in the rayon agro-industrial association, and especially about the poor coordination of their autonomous financing interests with the final results of agricultural production. The BelNIIEOSKh is developing new principles for accounting for the work of Sel'khoztekhnika, Sel'khozkhimiya and construction organizations on the basis of normatives of expenditures for technical service and agrochemical and construction work. The amount of the planned accumulations in percentages of the normative expenditures is established depending on the fulfillment of the plan for production and growth as compared to the level achieved for agricultural products in the branch being served, and in construction organizations--according to the established normative for each percentage point of reduction of the actual production cost as compared to the estimated cost.

In order to establish plans that are objectively equally difficult for production and procurements of agricultural products, the resource method will be used, according to which the planned indicators are determined on the basis of the quality of the land, and the availability of fixed and circulating capital and labor resources.

It is very important for improvement of the entire system of service for the kolkhozes and sovkhozes to be the primary concern of the RAPO. In this connection it is expedient to fill out orders for services only on request from the farms, and not to plan them "from above." In order to strengthen the control and inspection service, it is necessary to create subdivisions which must conduct objective inspections of the production and financial activity of all partners in the agro-industrial complex, regardless of the department to which they belong. The means allotted through all channels of financing for improving socio-cultural conditions for life in rural areas should be put at the disposal of the rayon agro-industrial associations and should be utilized under their control.

As distinct from economic planning, which is normative in nature, social planning in many areas has no normative base. As a result, in a number of cases it becomes nonobligatory for managers of many collectives, which stands in contradiction to the points of the May (1982) Plenum of the CPSU Central Committee. Therefore it is necessary to establish strict control to make sure that the funds for social development of the farms and villages are used for this purpose, completely and within the established time periods.

Agro-industrial associations have been created in all oblasts and rayons of the republic. Their first meetings have been held in a number of places, and work plans have been considered and approved. The councils of the associations are now delving into the main issues of agricultural production and, without duplicating the work of the executive committees of the rayon soviets of people's deputies, are searching for optimal solutions for improving the technology and organization of production.

"... It is very important," points out the secretary of the CPSU Central Committee, M. S. Borbachev, "from the first steps to take the correct direction in their activity and to concentrate attention and practical work on those issues on whose resolution the success of the fulfillment of the Food Program primarily depends" [1].

In keeping with the decisions of the May (1982) Plenum of the CPSU Central Committee, the Belorussian SSR Ministry of Agriculture has developed and approved measures for improving agricultural administration in the republic. In keeping with these, republic and oblast trusts of breeding farms, for seed growing of potatoes, Belglavskotoprom with its branch trusts, oblast trusts of breeding farms and other services that operate in parallel have already been abolished. The new forms of administration of agro-industrial complexes that have been created in the rayons of the republic will undoubtedly have more effective organizational and economic functions and rights of economic influence on the organizations under their jurisdiction. All this will render a positive influence on the successful fulfillment of the republic Food Program.

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## AGRO-ECONOMICS AND ORGANIZATION

### RAPO OPERATIONAL PROBLEMS IN SARATOV AREA

Moscow EKONOMICHESKAYA GAZETA in Russian No 24, Jun 83 p 12

[Article by N. Logach, chairman, Yershovskiy Rayon Agroindustrial Association [RAPO], Saratov Oblast: "Match Plans With Deeds" under the rubric "RAPO: Work Under New Conditions"]

[Text] One of the important and complex problems of the activity of RAPO councils at present is the smooth coordination of relations among all the RAPO partners. After all, the effectiveness of performance of an agroindustrial association as an integrated organism depends on the extent to which joint efforts are exerted in a concentrated manner to attain the designated purposes, namely, to increase the output and procurements of agricultural products. But so far some heads of subdivisions belonging in RAPOs are in no hurry to subordinate their interests to those of farmers and remain concerned solely about the welfare of their own enterprises and organizations. Consider just one example below.

When a monthly day for transporting organic fertilizers to fields was held, it turned out that there was not enough transport. The transport organization integrated with the RAPO was investigated, and it was found that some 30 motor vehicles of that organizations were "piling up" mileage by being used for various profitable operations in Balakov, Saratov and Engel's. The RAPO council condemned this practice. Within a period of 10 days all vehicles were returned to the rayon for use solely by assignment, that is, to perform tasks for the association. This resulted in the successful on-schedule fulfillment of the specified targets for carrying some 200,000 tons of organic fertilizers to the fields. In addition, transport began to be used smoothly for other urgent hauls within the RAPO. However, a complete mutual understanding still has not been reached with that transport organization. Measures now are being taken to regulate motor transport operations. The application of economic instruments will promote the interest of the heads of the transport organization, which is supposed to handle the hauls of agricultural freight, in performing properly within the framework of the agroindustrial association.

Year after year, the rayon's kolkhozes and sovkhoses have been complaining about the "Poliv" Rayon Production Association, which handles land irrigation on farms. Its basic indicator of performance is the number of hectares irrigated and the number of cubic meters of water pumped. However, the fields need moisture at particular times, whereas it has often been provided to them at wrong times and thus uselessly. Yet, "Poliv" personnel received higher wages than the kolkhoz and sovkhos workers. The mean monthly wage of an irrigation worker is 240-260 rubles compared with 170-180 rubles for members of farm teams, even though the latter shoulder the brunt of the work, such as the harvesting of fodder crops, the application of fertilizers to fields, etc.

The RAPO council adopted a special decision. When concluding agreements with farm teams and brigades, the personnel of the "Poliv" Association are henceforth

to join them and become participants in the collective contract system. They will receive advance pay not for the number of hectares irrigated but at the same rates as other team and brigade members. Under such conditions their interest in the attainment of the end-result will grow markedly and hence so will their contribution to the common cause.

This is not a problem specific to our rayon alone, as it probably agitates agricultural workers in other regions of the country as well, wherever the "Poliv" Production Association operates. As a future task we shall use that association as a basis for setting up a station for servicing sprinkler equipment and the water intake system.

The irrigation will be handled by farm team members themselves. The point is that the current irrigation personnel are chiefly residents of the local kolkhozes and sovkhoses who are staff members of the "Poliv" Association. Their work is seasonal. Whereas if they become farm team members, there will be work for them both in summer and in winter. Under these conditions the performance of the collective contract teams will improve. And the operators will thus take a proprietary interest in every irrigated hectare, as their responsibility for the fate of the harvest will increase.

At the RAPO council we also considered another problem, namely, the planning of agricultural production. It is high time to consider this, because six farms in our rayon are under outside administrative jurisdiction. Previously they had their own autonomous production plans and were not in always in accord with the rayon as regards the conduct of certain agricultural measures. We in the rayon had almost no influence on them. This year the matter was placed on a somewhat new foundation.

Like all other farms in the rayon, these six farms submitted to the RAPO their own 1983 plans, in which they coordinated with us all economic indicators such as: yields of grain and fodder crops, weight gain rates of livestock and volume and sales of grain, meat, eggs and other products to the state. For the first time, the heads of these six farms defended their plans before the agencies to which they are subordinated after consulting the rayon agroindustrial association.

It is conceivable that the RAPO council will, with the help of party and Soviet organs, develop effective forms of mutual relations contributing to a tighter responsibility of all farm heads and experts for the end-result of farming operations.

Currently the RAPO council and all agricultural toilers are exerting efforts to fulfill the target for the first 3 years of the five-year plan as regards the production and sales of farm produce and livestock to the state. We coped successfully with the 4-month target for sales of meat to the state. This year we expect to harvest 5.5 quintals of grain more per hectare than in the previous year and similarly to increase the output of meat and milk.

1386  
CSO: 1824/423

## AGRICULTURAL MACHINERY AND EQUIPMENT

### IMPORTANCE OF RELIABILITY OF TECHNICAL EQUIPMENT EMPHASIZED

Moscow EKONOMICHESKAYA GAZETA in Russian No 19, May 83 p 8

/Article by Nikolay Rodionovich Lozhchenko, general director of the Chelyabinsk Tractor Plant imeni V. M. Lenin Association: "For High Reliability of Technical Equipment"

/Text/ For 50 years now, since the startup of the plant, powerful caterpillar tractors with the ChTZ trademark have been well known at construction sites in agriculture. The demand for Chelyabinsk tractors increased because of the assimilation of the natural wealth of Siberia and the Far East and the implementation of the Food Program. One of the major concerns of the ChTZ collective today is to raise the technical level and improve the reliability and quality of machines that are produced. This is discussed in the article published below by the general director of the Chelyabinsk Tractor Plant imeni V. M. Lenin Association, Nikolay Rodionovich Lozhchenko.

By education a mechanical engineer, he began to work as a technologist at the Chelyabinsk Tractor Plant. He has been a shop chief, a deputy director and the head engineer of the enterprise. Since 1979 he has been in charge of the production association.

A letter recently came to the association from the bulldozer operator N. Guashrov from Novgorod Oblast. He has been working for many years on Chelyabinsk tractors with various modifications. His attitude toward them is this: good, strong machines; a comfortable heated cab; an excellent view. But the operators are not satisfied with everything. Frequently the running gear goes out of commission and the starter engine is weak. An experienced machine operator criticizes us correctly.

The T-130 tractor whose engine has a capacity of 160 horsepower, which is being manufactured presently, is more powerful than its predecessor, the T-100M machine. But the proportional material-intensiveness per horsepower has dropped from 102 kilograms to 85. The life of the basic components and aggregates has increased and it has become more universal. The tractor is used with more than 60 different machines and implements. But it also has a number of shortcomings which our collective is trying to eliminate.

## In Cooperation With Operators

The changeover to the output of the new tractor was accompanied by a radical restructuring of the shops. More than 500 million rubles were invested in technical re-equipment of production. The production areas were increased by 300,000 square meters and a considerable part of the equipment and technological fittings were updated.

But in the process of assimilating mass production and operation of the tractor, a number of weak places were revealed as were certain design-technological imperfections and production shortcomings. Related enterprises were called upon to deliver to the assembly conveyor a large number of parts. At first not all of them were able to cope with their tasks rapidly. At the same time there was a sharp expansion of the sphere of application of the Chelyabinsk tractor in combination with various mechanisms and implements.

Our collective, which has many years of tradition in cooperating with consumers, this time too paid attention to their complaints. The Chelyabinsk specialists analyzed in detail the causes of the defects of the machines of the first years of series production. A "Comprehensive Program for Raising the Technical Level and Improving the Reliability and Quality of the T-130 Tractor" was approved. Its implementation is under the supervision of the management of the association and the Ministry of Agricultural Machine Building.

I shall name certain of the largest measures. They include a changeover to manufacturing a new starter engine. Before carrying out this changeover it was necessary to standardize the new "Puskach" with the starter engines that are already being produced. In cooperation with workers of the Novorossiysk Krasnyy Engine plant, we made a number of innovations which increase the reliability of the cylinder piston group. The collectives of our design bureaus, which are headed by V. Kovalenko and B. Posin, modernized the transmission box. The number of complaints from operators regarding this component decreased by almost half. As a result the overall technical level and the reliability of the tractor increased. It is now being produced under the brand name T-130M.

Not only Chelyabinsk designers, but also specialists of a number of branch scientific research institutes and machine builders of the Cheboksary combined equipment plant deserve credit for this. Along with the design developments that improve the efficiency of the machine, production technology was improved and is being improved.

Further steps in this same direction are being taken by implementing branch special-purpose comprehensive programs. The basic measures contained in the programs are reflected in the commitments adopted by the association's collective which has entered the socialist competition under the motto "High-Quality, Reliable and Efficient Technical Equipment for the Food Program." It is intended to increase the service life of the engine and transmission to 8,000-10,000 motor-hours and that of the running gear to 5,000-6,000 motor-hours which will appreciably surpass the present efficiency of the T-130M tractor.

## Discipline--A Guarantee of Quality

The durability and sturdiness of components and parts and the operational reliability of the machines are determined largely by the conscientious attitude of the people toward the work entrusted to them. In other words, quality and discipline are concepts that are inseparable and interconnected. Here I have in mind various aspects of discipline--technological, labor and performance. The public and the administration of our association attach primary significance to instilling such discipline.

The organizational basis for the struggle for the honor of the ChTZ trademark has become a comprehensive system of control over the quality of products and labor. It is improved taking into account experience that we and other enterprises have accumulated. More than 100 standards of the enterprise now regulate the policy for producing products.

We have noted that the system of quality control produces greater results in places where the brigade form of organization of labor and payment for the final result have been introduced. And this is understandable. It is precisely in the brigade that the workers increase their responsibility for the work that has been done and develop an attitude of intolerance toward slipshod work and hack work.

At the ChTZ the brigade headed by Valeriy Stepanovich Kuleshov is famous for its work. This collective was one of the initiators of the competition for early completion of the assignments of the 11th Five-Year Plan. The brigade has been entrusted with the production of products with their own control stamp.

What is the secret of the success of Valeriy Stepanovich and his comrades? I shall answer this way: One of the conditions is to operate correctly and maintain in good condition and complete order the equipment and fittings that are entrusted to them and strong technological discipline. And the main thing, perhaps, is a high sense of responsibility on the part of each for the business of the collective and, conversely, the responsibility of the brigade for the work of each member.

The same rule is followed by the brigades of Aleksey Ivanovich Zav'yalov, Vladimir Nikolayevich Gritchin and others who also produce products without complaints from the department of technical control. The brigade leader Aleksandr Vasil'yevich Khovanskiy states with conviction: "The final result cannot be positive if in the struggle for quantity one sacrifices quality. With the changeover to brigade organization of labor the fulfillment of monthly assignments has improved considerably here and rejected work has decreased."

The possibilities of a comprehensive system of control of the quality of products and labor are still not being utilized fully. The association receives complaints about purely production defects that have come about as a result of violations of technological discipline and an unconscientious attitude on the part of some of the workers toward their responsibilities. For example, one of

the workers of the batching and release shop failed to drain the water from the radiators before dispatching tractors this winter. As a result the engines were frozen. Or take this case. A fitter in the shop for testing engines incorrectly installed a casinghead gasket. As a result the engines broke down. We learned of this from complaints from the client enterprise. Of course such cases are not simply forgotten. Practical conclusions are drawn from them.

But still the association is following in the tracks of an accomplished fact. And the comprehensive system of quality control is directed primarily toward preventing such phenomena. Unfortunately, the preventive measures in certain subdivisions of the association, particularly at the plant for sets of tractor equipment, until recently have not been taken energetically enough. They have not been courageous in putting a stop to violations of technological discipline which give rise to slipshod work. The shops have not done proper educational work. We are now correcting the executives of this plant who have let questions of quality fall from their field of vision.

The effectiveness of the comprehensive system will be promoted by an automated subsystem which will make it possible to evaluate more strictly and objectively the technological discipline in the workers' position. We are revising the policy for material incentives for high-quality work. We are improving the activity of the service for technical control. Now one-fifth of the controllers are already working according to the brigade method.

The goal of the association's collective is to submit the T-130M tractor for certification for the highest quality category in the near future. The state Emblem of Quality has already been awarded to the marsh modification of the machine.

#### About Spare Parts and Other Things

The problem of reliability is also a problem related to operating technical equipment. Extensive checking in various regions of the country showed that about 80 percent of the T-130's are being operated with violations of the rules. This circumstance has caused our association to begin to create support points. By the end of this year there will be 70 of them. They not only consider the clients' complaints about quality on the spot, but also check on the correctness of the operation of the Chelyabinsk machines and render skilled assistance in service and repair, and also training machine and tractor operators.

We regularly conduct local technical conferences where we generalize experience, analyze mutual complaints and develop joint proposals for the future. Each year 200-250 specialists are trained at the association base, and they, in turn, can transfer the knowledge and skills they receive to other machine and tractor operators.

But it is still not enough to train service personnel. According to our observations, organizations of the USSR Ministry of Water Management, construction ministries and the USSR Goskomsel'khóztekhniká are not concerned enough about strengthening the base for technical service of Chelyabinsk tractors. During the course of the inventor's supervision of the operation of tractors, our

specialists come across cases where the wrong kind of oil is used in the machines, which sharply reduces the operating capacity of the aggregates. The USSR Ministry of the Petrochemical Industry is indebted to the machine operators.

The volume of production of spare parts is constantly increasing. During two years of the current five-year plan the association has increased their output by 16 percent. But still the situation remains strained. What reason do we see for this?

During the past 5 years the normative time period for service of ChTZ tractors has increased several times. At the present time it is 11 years. But this is frequently violated. A considerable number of the machines that are being operated are in need of repair. Note that the norms for the expenditure of spare parts for the ChTZ tractors have not been revised at all since 1978.

Finally, there is one more unutilized reserve. We are speaking about renovating worn-out parts when repairing machines. Of the parts that repair workers use, 96 percent are new and only 4 percent are renovated or restored. And practical experience shows that at repair enterprises a "second life" can be given to 40-60 percent of the parts that have already been used.

The Chelyabinsk Tractor Plant is one of the advanced posts of heavy industry of the Soviet Union which were created under the plan of the 1st Five-Year Plan. Preparation for the 50th anniversary of the enterprise has been celebrated in all the shops by mass competition of the workers and engineering and technical personnel for more complete utilization of existing internal reserves.

Guided by the decree of the CPSU Central Committee and the USSR Council of Ministers, "On Measures for Further Raising the Technical Level and Improving the Quality of Machines and Equipment for Agriculture, and Improving Their Utilization and Increasing Their Deliveries in 1983-1990," the collective of Chelyabinsk tractor builders is exerting maximum efforts in order to provide for high reliability and effectiveness of the technical equipment they produce.

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## AGRICULTURAL MACHINERY AND EQUIPMENT

### ACTIVITY OF CHELYABINSK TRACTOR PLANT DESCRIBED

Moscow SEL'SKAYA ZHIZN' in Russian 1 Jun 83 p 1

[Article by A. Yarushin: "The Chelyabinsk Hero"]

[Text] Moving along the conveyor, the tractor was sent to the stand for installing the crawler belts. It rumbled in a strained way as if trying on an iron "shoe." A button was pressed and the crawler belts were joined together, another one was pressed and the closing pins were pressed in. Another T-130M tractor was ready, with 160 horsepower in its steel muscles.

One has occasion to see this picture fairly frequently, but each time one is inspired by the exciting moment of the birth of the next machine. Here one sees before one's eyes the labor of a collective of many thousands, and here one can determine correctly how efficiently the complicated manufacturing plant's organism is arranged.

The main conveyor moves continuously. It began its trek a half century ago. On the day the plant started up PRAVDA wrote: "The Chelyabinsk Tractor Plant is a new planet in the Soviet galaxy, a planet which will appear on the outskirts of the constellation of tractor and automotive plants which we have already constructed and assimilated." The Chelyabinsk giant was also rapidly assimilated. It took 11 months to produce the first 10,000 F-60 tractors. By today's standards this is a small figure, but for that time it was a kind of record.

The history of the Chelyabinsk Tractor Plant is full of records. The plant has entered bright pages in the country's chronicle. The first ChTZ tractors plowed fields on kolkhozes and sovkhoses that had just been created. During the difficult war years it changed over to producing armored vehicles. Along with collectives of the Leningrad Kirov plant and the Kharkov Serp i Molot plant who had been evacuated to Chelyabinsk, it created a new combined enterprise which the people lovingly called "tank city."

The tank city residents stood their military labor watch like soldiers on the front line of fire. "Everything for the front, everything for victory!"--this slogan constituted the essence and meaning of life of the tank builders. Remarkable patriotic movements and new forms of competition originated. The Komsomol member Anya Pashnina became the organizer of the first Komsomol youth front brigade at the plant. Subsequently, more than 7,000 of these brigades worked in the shops of the enterprise.

The weighty contribution of the plant collective to the victory of the Soviet people over Hitler's fascism amounted to 18,000 tanks and self-propelled artillery installations and 48,500 tank motors. It is no accident that the plant has been awarded the Order of the Red Star and the Order of Kutuzov of the First Degree.

The postwar years were filled with no less of a persistent struggle for creating new technical equipment. As early as 5 January 1946 the first postwar tractor was produced, and on 12 June, with the startup of the main conveyor, mass production of the S-80 tractors was begun. These machines played an important role in assimilating the virgin land and constructing hydroelectric power stations and irrigation systems.

Today's enterprise is not very much like the prewar one. When you go through the area you see the new buildings constructed quite recently. A radical restructuring has been done here with a changeover to the output of T-130 tractors. During the 9th and 10th Five-Year Plans alone more than 300,000 square meters of production space were put into operation. The buildings for press and welding work and the motor plant have been constructed.

More than 10 years ago, on the basis of the Chelyabinsk Tractor Plant, a production association was created. It includes 4 branch plants and 7 specialized industries. One would not recognize the branch plants today. New buildings have also been introduced here.

Beginning this year the Chelyabinsk workers are producing the T-130M tractor. It is more reliable than the previous model: it has a new starter motor and other basic components have been modernized. On 25 March the 100,000th T-130M tractor came off the conveyor.

Along with the enterprise, remarkable personnel have matured. Many workers and specialists were initiators of various patriotic movements. Hero of Socialist Labor, Deputy of the RSFSR Supreme Soviet, a lathe and carousel operator, Yu. Z. Cherezov, the welder I. P. Knyaz'kin, the forge operator V. A. Kislitsyn, the Lenin Komsomol prize winner and lathe-carousel operator A. M. Chepel' and many others are known far outside the plant.

. . . We are in the second shop for bodies and chasis of the press and welding production. Here they assemble and weld one of the most important components of the tractor--the body of the steering clutches. One recalls that about 15 years ago the manufacture of this component was considered to be the greatest "bottleneck." But technical thought was working. They introduced semi-automated welding in an environment of carbonic acid gas--and everything went well. And now, when the section has been transferred to the new building, they apply quite new technology here. The welding is done on a conveyor and each worker performs his own operations. The welder Anatoliy Vasil'yevich Kukin suggested creating a complete comprehensive brigade with payment for the final result. And he is in charge of it.

Since the second half of this year the Chelyabinsk workers have completely changed over to the output of T-130M tractors. The tasks are increasing. And many managers relate their implementation to more active introduction of the brigade form. In the association as a whole 1,720 brigades have now been created, which work according to the final result.

The belt of the main conveyor speeds by. Almost a million machines have been produced by the Chelyabinsk Tractor Plant, the winner of three orders of honor. Today they are being used to construct railroads and canals, pipelines and electric power stations. They are working on the rice paddies and draining marshes. They are working on the construction projects of the nonchernozem zone and extracting minerals. The Chelyabinsk hero is truly universal.

And the labor watch continues. The glorious traditions of the tractor construction workers lives. In their plans is a further rise in the technical level of the T-130M tractor and the D-160 engine. It is related to the implementation of branch special-purpose comprehensive programs. There is to be an increase in the service life of the engine, transmission and running gear. Work is being done to create an even more powerful tractor.

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GRAIN VARIETY DEVELOPMENT IN SIBERIA

Omsk ZEMLYA SIBIRSKAYA, DAL'NEVOSTOCHNAYA in Russian No 3, Mar 83 pp 16-17.

[Article by D. A. Saprygin, chief of division for scientific and technical information of SibNIIRS: "The Varietal Structure of Grain Crops"]

[Text] For farmers of Western Siberia the utilization of new, productive strains of grain crops, the introduction of short-rotation specialized grain-fallow crop rotations, and improvement of the structure of the grain fields are acquiring a mass nature at the present time.

These new tendencies were being developed in individual rayons even during the years of the 10th Five-Year Plan. The varietal structure of the grain crops changed more rapidly. The proportion of varietal plantings of the main crops increased and amounted to 94.3 percent in 1980. The proportion of varietal plantings increased in all the administrative rayons of the region and for all grain crops. The best results were achieved in Omsk Oblast, where varietal plantings of barley occupied 98 percent, oats--96 percent and spring wheat--100 percent.

The greatest increase in varietal plantings was achieved in Tyumen and Novosibirsk Oblasts, but in the latter nonvarietal seeds were still planted on considerable areas of oats (13 percent) and barley (19 percent). In Tomsk Oblast, while highly productive strains of local selection were available (Narymskiy-943, Tayezhnik and Yubileynyy) nonvarietal plantings of oats amounted to about 20 percent.

In 1980 spring wheat throughout the region occupied 62.7 percent of all the area planted in grain crops--6.1 percent less than in 1976. Basically 25 strains were cultivated, 21 of which were soft and 4 of which were durum wheat. Most of the wheat fields were planted with medium ripening varieties--81.4 percent, while medium late varieties occupied 10 percent and medium early varieties--8.4 percent.

The number of varieties of wheat was greater in Altay Kray. While in 1975 they planted 13 varieties here, in 1980 they planted 17. Only 3 varieties were cultivated in Kemerovo Oblast. There was a sharp reduction in the varietal diversity in Tyumen Oblast: in 1975 there were 12 and in 1980--only 6, and 4 of them (Novosibirskaya-67, Rang, Strela and Skala) occupied 96.6 percent of the areas planted in wheat.

In Omsk Oblast, conversely, there was an expansion of the varietal composition of the areas planted in wheat (from 9 to 12), and in Novosibirsk and Kemerovo Oblasts it remained stable: 12-8 varieties.

Of the overall varietal composition there was a prevalence of medium ripening varieties: Saratovskaya-29--46.8 percent, Novosibirskaya-67--21.6 percent, the medium early Skala--7 percent, and the medium late Omskaya-9--4.6 percent.

Because of the regionalization and dissemination of new varieties of spring wheat, in the varietal structure each year there has been a steady reduction in the proportion of areas planted in outdated varieties. During the five-year plan the area planted in Saratovskaya-29 decreased by 12 percent, Lyutessens-758--by 10.3 percent, Mil'turum-533--by 4.5 percent and Grekum-114--by 4 percent. There was also a reduction of the areas planted in Strela, Lade, Pompe, Svenno, Diamant, Khar'kovskaya-46 and others.

But with the relatively wide diversity of the varietal composition, the outdated strains continue to occupy most of the area in certain administrative rayons. For example, in Altay Kray in 1980 Saratovskaya-29 occupied 69 percent, and in Omsk Oblast--47 percent. In Tomsk Oblast almost all of the area (96 percent) was planted with the Skala strain, and in Kemerovo Oblast--Skala and Strela (up to 80 percent).

The new strains that were regionalized in 1973-1980 still do not occupy their proper place on the grain fields everywhere. Only in Tyumen Oblast in 1980 they were planted on up to 75 percent of the area and in Novosibirsk Oblast--58 percent, but in Omsk Oblast they occupied only half of the area planted in wheat. But the proportion of new varieties of wheat planted in Altay Kray in 1980 was especially low--16 percent. Low rates of strain replacement are to be found here for all strains--Novosibirskaya-67, Tselinnaya-20, Luganskaya-4, Omskaya-9, Altayka, Almaz and others.

In 1980 spring wheat occupied 11.2 percent of the area planted in grain crops in the region. Basically 25 varieties were cultivated. The largest proportion was of the outdated strain Omskiy-13709--34.3 percent. An area approximately equal to this was occupied by 5 new strains that were regionalized in 1970-1980: Chernigovskiy-7, Luch, Krasnoufimskiy-95, Tselinnyy-5 and Obskoy.

In 1980 oats were planted on 21 percent of the area of grain crops. With a smaller varietal diversity than that of barley, comparatively new strains were planted on the areas of this crop--Astor, Narymskiy-943, Omskiy kornovoy, Risto, Yubileynyy, Tayezhnik, Belozernyy, Skorospelyy and Sel'ma. The overall increase of the area planted in them under the 10th Five-Year Plan amounted to 1,226,900 hectares, and their proportion reached 33.7 percent of the area planted in the crops. But still 35 percent of the oat fields were planted in outdated strains (Pobeda, Zolotoy dozhd', L'govskiy-1026).

An analysis of statistical materials about varietal plantings in 1980 shows that on an average for the region the new regionalized varieties of spring wheat and oats occupy only one-third, and barley--one-fourth of the areas planted in this crop. The best results in organizing variety replacement are

found in Tyumen Oblast, where the proportion of new varieties of spring wheat amounted to 75 percent in 1980, and barley--67.5 percent. The work with the Luch strain of barley can serve as an example of intensive introduction of new varieties. During 3 years (1978-1980) the area planted in it expanded from 138 hectares to 127,000 hectares--almost 9-fold. The area planted in oats of the Astor strain also increased at rapid rates: during 5 years (1976-1980) the areas planted in it increased 12-fold (from 10 hectares to 124,000 hectares).

Intensive introduction of new strains of barley and oats has been accompanied by an increase in the average productivity of these crops--up to 17.8 and 16.0 quintals per hectare.

On an average for Tyumen Oblast in 1980 there was the highest proportion (57 percent) of new varieties on the areas planted in spring wheat, barley and oats, which undoubtedly made it possible (along with other factors) to obtain the best average productivity of grain crops in the region during the 5 years --15.4 quintals per hectare.

Unfortunately, the overall situation with respect to the introduction of new varieties into production remains unsatisfactory, which can be confirmed by numerous examples.

Outdated varieties that were regionalized in 1929-1960 occupied 60 percent of the areas planted in wheat in 1980, 26 percent of the areas planted in oats and about 40 percent of the areas planted in barley. In Novosibirsk Oblast beginning in 1979 the highly productive variety of spring wheat, Lyutestsens-57, has been regionalized throughout the forest steppe. At the Barabinskiy state strain testing station, on an average for 1978-1980, it produced a yield of 4.2 quintals per hectare above the standard. But within 2 years after it was regionalized, in the third year (1981) the area planted in Lyutestsens-57 in the oblast was still extremely small--6,000 hectares.

More than 80 percent of the area planted in oats in Novosibirsk Oblast in 1980 was planted in outdated or unregionalized varieties. At the same time the highly productive Narymskiy-943 variety, within 3 years after it was regionalized, occupied only 14 percent of the area planted in the crop in all of the natural zones. At the Vengerovskiy state strain testing station it surpasses the standard in productivity by 6 quintals. But in the rayon only 900 hectares are allotted to it, and 8,000 hectares are planted in such outdated varieties as Zolotoy dozhd', L'govskiy-1026 and others. In just one year on this area they "lost" 50,000 quintals of additional yield from the new strain. At the Moshkovskiy state strain testing station, Narymskiy-943 is more productive than the older varieties by 6 quintals, but in the rayon it only occupies 17 percent of the area, and in the neighboring Bolotinskiy Rayon the leading variety on the planted areas is still the unregionalized L'govskiy-1026.

At the Novosibirsk state strain testing station the additional yield of Narymskiy-943 as compared to the old varieties amounts to 2.7 quintals. And in 1980 in the rayons that are served by this strain testing station about 25,000 hectares were planted in the Zolotoy dozhd' and L'govskiy-1026 varieties, as a result of which they failed to receive approximately 60,000 quintals of

additional yield from the Narymskiy-943 variety. Beginning in 1981 the Sel'ma variety of oats was regionalized in the oblast, and in that year it occupied only 760 hectares. This is very little for a variety that produces more than 70 quintals per hectare under the conditions of the strain testing station.

Krasnoufimskiy-95 barley has been regionalized in all of the natural zones of Novosibirsk Oblast since 1976. It surpasses the productivity of the Viner variety by 3-4 quintals, but the area planted in it is increasing very slowly: in 1980 the variety occupied 16 percent of the area planted in barley, and 60 percent was planted in the Viner variety and unregionalized varieties. As a result they failed to obtain approximately 160,000 quintals of barley, including 15,000 quintals in Novosibirskiy Rayon. These figures reflect only part of the immense losses of the potential of the new varieties.

When analyzing the intensiveness of strain replacement in Western Siberia we used as one of the criteria for this process the average annual (1976-1980) percentage of increase over the achieved maximum in 1980 (Table 1). According to this criteria, by the method of extrapolation we calculated the number of years necessary for complete strain replacement individually for each of the crops under consideration at the existing rates of strain replacement. The entire area planted in the crop was taken as 100 percent, and as a result of dividing this sum by the average annual percentage (proportion) of new varieties in the areas planted in the crops we found the amount of the basic criterion for the intensiveness of strain replacement--the criterion of time (Table 2).

Table 1. Average Annual Intensiveness of Strain Replacement of Grain Crops in Administrative Rayons of Western Siberia in 1976-1980, %

Oblast, Kray	Spring Wheat	Spring Barley	Oats	Average for Crops
Tyumen	14.7	16.8	12.6	14.4
Omsk	9.3	1.8	5.4	5.5
Novosibirsk	11.6	4.0	3.3	6.3
Altay	3.2	10.8	8.0	7.3
Kemerovo	0.4	5.3	13.9	6.5
Tomsk	0	0	10.3	3.4
Average for crop	6.5	6.4	8.9	7.2

Table 2. Calculated Number of Years for Complete Strain Replacement of Grain Crops at Existing Rates in Administrative Rayons of Western Siberia During 1976-1980

Oblast, Kray	Spring Wheat	Spring Barley	Oats	Average for Crops
Tyumen	7.0	6.0	8.0	7.0
Omsk	10.7	55.0	18.0	27.9
Novosibirsk	8.6	25.0	30.0	21.2
Altay	31.0	9.0	12.0	17.3
Kemerovo	--	19.0	7.0	42.0
Tomsk	--	--	9.7	69.9

An analysis of the amount of the criterion of the average annual intensiveness and the criterion of time shows that on the whole for Western Siberia the process of strain replacement is most intensive for oats, for which the average annual increase in the areas of new varieties amounted to almost 9 percent, and the criterion of time necessary for complete strain replacement was 11 years, while for spring wheat and barley the former indicator was less than 2.5 and the latter--32-24 units.

The first and second criteria of the intensiveness of strain replacement of oats can be considered close to optimal in Kemerovo and Tyumen Oblasts, where it is possible to completely replace the old strains with new ones in 7-8 years.

The average annual volume of strain replacement or renewal of wheat fields in the region in 1976-1980 amounted to only 6.5 percent of the area planted in the crop, and there were significant differences among the administrative rayons. In particular, the minimum average annual increase in the areas planted in new strains, 3.2 percent, was found in Altay Kray. In Kemerovo and Tomsk Oblasts the process of strain replacement did not take place even in minimum volumes.

There are negative maximum values of the criterion of time in various administrative rayons, and they are not related to any peculiarities of the specific grain crop. For example, for strain replacement of spring wheat in Altay Kray the time criterion is 31 years, for oats in Novosibirsk Oblast--30 years, and for barley in Omsk Oblast--55 years.

One can see how great the dependency between the level of conventional net income and the rates of introduction of new strains of grain crops into production is by the experience of the dissemination of the Novosibirskaya-67 variety of spring wheat. For example, the variety occupied a planted area in the range of 100,000 hectares in Novosibirsk Oblast in the 3rd year of regionalization, and in Omsk Oblast--in the 5th year. On the whole in the area of regionalization during 1976-1980 the possible area for cultivating

Novosibirskaya-67 was reduced by almost half, as a result of which about 60 million rubles' worth of possible economic effect was lost. The most appreciable losses were in Omsk Oblast--about 20 million rubles, and Novosibirsk Oblast and Altay Kray--16 million rubles each.

The need to use the criterion of the intensiveness of strain replacement in practical activity is obvious. It indirectly reflects the efficiency of the influence of selection centers on the realization of scientific potential in production and, on the other hand, the activity of agricultural agencies and specialists of kolkhozes and sovkhozes in organizing strain replacement.

11772

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## TILLING AND CROPPING TECHNOLOGY

### GRAIN VARIETY DEVELOPMENT IN KAZAKHSTAN

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 8, Aug 82 p 20

[Article by N. Plotnikov, chief of the inspection team of the State Committee for Strain Testing of Agricultural Crops under the USSR Ministry of Agriculture for the Kazakh SSR, candidate of agricultural sciences, and G. Orlovskaya and I. Prikazchikova, agronomist-inspectors: "An Important Reserve for Increasing Productivity"]

[Text] The main thing today, and the more so tomorrow, noted L. I. Brezhnev in his report at the May (1982) Plenum of the CPSU Central Committee, is to increase productivity. This means placing primary importance on selection and seed growing. This will require the introduction of a scientifically substantiated, well-thought-out system of farming which fully takes into account the natural and economic conditions of each zone and oblast, of each rayon and of each farm.

Grain growers of Kazakhstan have done a good deal with respect to this: the task of increasing the average annual grain production to 25-27 million tons under the past five-year plan was fulfilled. In the first year of the 11th Five-Year Plan, in spite of a number of serious difficulties, the farmers of the republic gave the homeland more than 950 million poods of grain. Kazakhstan has a right to be called a large producer of food grain and the main supplier of strong and durum wheat. The decisions of the 26th CPSU Congress, and also the 15th Congress of the Communist Party of Kazakhstan, earmarked increasing the gross yield of grain in the republic to 28-29 million tons under the 11th Five-Year Plan. It will undoubtedly be necessary to mobilize new reserves in order to do this. One of the important factors in increasing the production of grain is the most rapid introduction of new regionalized, more productive strains, which, without additional expenditures, make it possible to increase productivity considerably. For example, the Saratovskaya-42 strain of spring wheat which was regionalized during the years of the 10th Five-Year Plan, occupied 489,500 hectares in Aktyubinsk Oblast in 1981, or 46.6 percent of the entire planted area. The additional yield as compared to Saratovskaya-29 amounted to 1.3 quintals per hectare. They have already produced into production here the Nakat strain of durum wheat which was regionalized in 1978. It made it possible in past years to regularly fulfill the plans for the procurements of durum wheats and to obtain additional monetary payment.

One can give many examples in which by introducing new strains many farms, rayons and even oblasts have obtained significant additional grain yields. For example, in 1981 the new strain of wheat, Omskaya-9, which is cultivated in Kokchetav Oblast on an area of 392,500 hectares made it possible to increase the yield, as compared to the regionalized strain Saratovskaya-29, by 1.5-5.6 quintals per hectare. The new regionalized strain of millet, Ural'skoye-109, in zones II and III of Uralsk Oblast on an area of 2,322 hectares produced 9.2 quintals, and the Saratovskoye-853, on an area of 27,000 hectares, produced only 4.7 quintals per hectare. As a result, the farms of these zones fail to receive more than 12,000 tons of this valuable groat crop.

Interesting results were obtained in 1981 on the farms of Tselinograd Oblast, where the new regionalized strain of spring wheat, Tselinnaya-21, demonstrated significant advantages in productivity. Thus on the Zavety Il'icha in Makinskiy Rayon, on an area of 300 hectares the yield was 14.2 quintals of grain per hectare while Saratovskaya-29 on an area of 6,200 hectares produced 5.5 quintals less. On the Sovkhoz imeni M. Gor'kiy, Donetskiiy-8 barley produced 15.4 quintals per hectare on an area of 1,200 hectares while the previously regionalized strain Omskiy-13709 produced only 13.5 quintals per hectare on an area of 4,800 hectares.

One could give many examples like these. They show the great potential possibilities of new strains that are capable of giving the country millions of additional tons of high-quality grain without any special expenditures. Therefore the most rapid introduction of them into production is one of the major tasks for farmers of the republic, for it is precisely these strains that are to be reinforced under the current five-year plan while the level of grain production in the republic is to be raised.

It is known that the most rapid introduction of a new strain depends on the availability of seeds. Strain testers of the republic are doing an immense amount of work for the most rapid propagation of them, annually raising a significant quantity of seeds that are promising and in short supply, and sending them to the base farms. In 1981 alone the base farms received from an area of 7,400 hectares 51,400 quintals of wheat seeds, of which 22,800 quintals or 44.4 percent were of strains that are promising and in short supply, and more than 2,000 quintals were grain from the durum wheat Almaz, Altayka, Nakat and Bezenchukskaya-139.

Still, on a number of farms of the republic the introduction of new strains leaves something to be desired. Thus, according to data of the Kazakh SSR Central Statistical Administration, 89 new strains of various agricultural crops that were regionalized under the past five-year plan have not reached the planned levels. For example, at the end of the 10th Five-Year Plan only 200,000 hectares were planted in new strains of winter wheat, or 16.2 percent of the overall planted area, and spring wheat-- 1,612,300 hectares or 10.5 percent. Of these, the strains of Kazakh selection occupied 608,600 hectares, or 44.6 percent of the area planted in new strains. The areas planted in the highly productive strain of barley Tselinnyy-5, is increasing unjustifiably slowly in Vostochno-Kazakhstan, Turgay and Severo-Kazakhstan oblasts. The areas planted in the Volzhskoye-3 strain of millet are expanding slowly in

Vostochno-Kazakhstan, Semipalatinsk, Turgay and Tselinograd oblasts. At the same time many farms are planting unregionalized strains on the arable land as they did before. In 1981 the areas planted in unregionalized strains were especially significant on the farms of Semipalatinsk, Taldy-Kurgan, Pavoldar and Turgay oblasts.

All these shortcomings in the utilization of highly productive strains of grain crops should be taken into account and rectified in the near future. This is required of farmers of the republic by the decisions of the May (1982) Plenum of the CPSU Central Committee.

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11772

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## TILLING AND CROPPING TECHNOLOGY

### FOLLOW-UP COMMENTARY ON KAZAKH GRAIN VARIETY DEVELOPMENT

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 2, Feb 83 p 7

[Article: "An Important Reserve for Increasing Productivity"]

[Text] In the 8th issue of the magazine for 1982 this was the title of an article published by the chief of the inspection team of the State Committee for Strain Testing of Agricultural Crops Under the USSR Ministry of Agriculture for the Kazakh SSR, N. Plotnikov and the agronomist-inspector, G. Orlovskaya and I. Prikazchikova. It noted that the main thing today, and the more so tomorrow, is to increase productivity. This means placing special emphasis on selection and seed growing. Yet on a number of farms of the republic the introduction of new strains of grain crops still leaves something to be desired. The areas planted in highly productive strains of barley are increasing slowly in Vostochno-Kazakhstan, Turgay and other oblasts.

The deputy chief of the agricultural administration of the Vostochno-Kazakhstan oblast soviet of people's deputies, A. F. Malyuk has announced to the editorial staff that on farms of the oblast Tselinnyy-5 barley occupied more than 29,000 hectares, which amounts to more than one-fourth of the areas planted in grain crops in the oblast. In the future it will occupy 40 percent of the area planted in barley, and 60 percent of the area is to be allotted to the newly regionalized, highly productive strain of barley, Donetskiiy-8.

The chief of the agricultural administration of the Turgay Oblast soviet of people's deputies, I. A. Aksakalov, notified the editorial staff that the Tselinnyy-5 strain of barley, which is being tested in all state strain testing stations of the oblast, has proved to be more productive than the previously regionalized strain, Omskiy-13709. Yet Tselinnyy-5 is not as productive as the Donetskiiy-8 which was regionalized in the oblast as early as 1980.

Production tests conducted not only in state strain testing stations, but also in the oblast state agricultural experimental station confirmed once again that Donetskiiy-8 is the most productive strain in the oblast. During the past 5 years at the Oktyabr'skiy strain testing station the average productivity of Tselinnyy-5 was 22.5 quintals per hectare, and Donetskiiy-8--24 quintals. At the Zhaksynskiy, Derzhavinskiiy and Arkalykskiy state strain testing stations these figures were, respectively: 22.6 and 25.4, 17.6 and 18.6, 20.7 and 22.5 quintals of barley per hectare.

Therefore farmers of the oblast are also adhering to the course of propagating the highly productive strain, Donetsk-8. Of the 21,400 tons of barley seeds that have been stored up for the 1983 crop, there are 15,400 tons of seeds of the Donetsk-8 strain. Moreover, the state agricultural experimental station has sold 1,400 tons of Donetsk-8 seeds of the elite class and the first reproduction; there are 2,000 tons of varietal seeds in the state resources.

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11772

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## FORESTRY AND TIMBER

### ECONOMY IN USE OF TIMBER PROMOTED

Moscow AGITATOR in Russian No 11, Jun 83 pp 12-14

[Article by A. Teterin, chief of the subdivision of balances and plans for distribution of timber materials of the USSR Gosplan: "Economizing on Timber Materials"]

[Text] Construction parts and elements, poles for local power transmission lines and communications, pit props for mines and cross ties for railroads, paper and cardboard, furniture and artificial fiber, alcohol and nutritive supplements--all these and many other things directly or in the final analysis are manufactured from wood. The USSR's share in the world supplies of it amounts to 36 percent, and in the supplies of the valuable, coniferous, breeds --even more--48 percent. In terms of the shipment of timber and the production of timber materials our country also occupies first place in the world.

But nonetheless our wealth of timber must be utilized thriftily, not forgetting about the fact that it is possible to return to a felling area only after dozens of years, and to a coniferous area--after 100-150 years: the needs of the national economy for timber materials are constantly growing and the procurements of timber are not keeping up with them, as a result of which the consumers are sometimes experiencing difficulties.

This is related largely to the fact that the plans for procurements and shipments of timber along the railroads are regularly unfulfilled. A radical change is needed here. But even the plans themselves for a long time now have not envisioned large-scale expansion of timber procurements, and are based on the need for better and more complete utilization of each cubic meter of timber raw material.

The fact is that this is becoming more and more expensive. Timber procurements in the European part of the country have had to be reduced for a number of years now. And the proportion of Eastern Siberia and the Far East in the shipment of timber has increased from a little more than one-fourth in 1960 to about two-fifths at the present time. And here, as distinct from long inhabited regions, everything must begin from zero, as they say: it is necessary to create not only the timber industry enterprises themselves, but also roads, housing and facilities for cultural and personal purposes. As a result, capital investments per unit of capacity turn out to be 1.5-1.7 times greater than in the western regions of the country. And the shipments of timber cargo

are longer. In 1965 the average distance over which they were shipped on railroads amounted to 1,500 kilometers, and now--more than 1,700 kilometers.

Forests are truly an immense wealth of our people. They are necessary for maintaining the water balance, purifying the air basin, and protecting agricultural land from erosion and dry winds. This means that timber must be procured in such a way that the areas of forests do not decrease. And timber and the products that are made from it must be utilized efficiently and without losses.

The 26th CPSU Congress has set the task of significantly increasing the comprehensiveness of the processing of timber raw material. A good deal is being done in this area, and the output of the final product per cubic meter of procured timber increased by one-third from 1975 through 1982. The production of the most effective, resource-saving materials is increasing--chipboard, cardboard and veneer. These figures show clearly their advantage: to produce a ton of cardboard requires 5 cubic meters of timber, and the boxes produced from this cardboard replaces 15 cubic meters of timber materials; coniferous timber material is utilized in lining work no more than 5 times, while veneer with a processed surface is used up to 50 times; each cubic meter of chipboard replaces 3-3.5 cubic meters of commercial timber.

This year's plan envisions saving 11.5 million cubic meters of conventional round timber as compared to the expenditure norms for 1982 (slabs, veneer and other materials are translated into this according to particular coefficients). Of this quantity, 1.7 million cubic meters should be saved in construction, 1.6 million in furniture production, 1.3 million in wood processing, that is, in manufacturing standard buildings, batching items, carpentry and other items, 5.9 million in processing brush wood, that is, in producing timber materials, ties and veneers, and a million cubic meters in other branches. The scale of the earmarked economy is clear from these comparisons. This is practically a year's volume of shipment of commercial timber by all timber industry enterprises of Vologda or Perm Oblasts; the planned economy would be enough for all the pulp and paper industry in the country to operate for almost 3 months.

There are reserves for economizing in literally all areas of the timber complex. One could begin simply with the fact that procurement organizations annually throw away more than a million cubic meters of timber on timber felling areas and logging roads, which then, at best, they burn, and frequently they leave it to rot to the detriment of the forest. A good deal of procured timber is also lost during floating.

There is a considerable overexpenditure of timber at many sawmill enterprises. The reason for this is the poor sorting of the raw material before sawing and violations of technology and conditions for storing timber and timber materials that are already prepared. For example, at the Dormidontovskiy timber plant in Khabarov Kray last year they frequently used saws with an increased thickness, and did not select the ones with optimal dimensions, taking into account the diameter of the logs. Because of this there is a thicker slab and more sawdust.

Many construction organizations utilize timber in far from the best way. Inspections frequently reveal cases of spoilage of timber materials and veneers, and illegal delivery of them to outside enterprises or even simply thefts. Sometimes railroad ties and poles for communication lines are sawed up, and boards that are completely suitable for use which are left after construction are destroyed.

The utilization of wastes is a large problem which has still not been completely solved. In the production of timber materials it comprises more than one-third of the processed wood, in the production of railroad ties--about one-half, and in the production of veneers--almost two-thirds. Each year there are approximately 90 million cubic meters of wastes that are suitable for subsequent utilization.

Ninety million! And last year only 48 million were utilized, and 13.5 million cubic meters were utilized as fuel while only 34.5 million were utilized for technological purposes.

In particular, the wastes were used to process 30 percent of the wood chips and 37 percent of the chipboard (incidentally, even the rest of it is manufactured not from commercial timber, but mainly from firewood). These slabs and also industrial wood chips made of wastes for the pulp industry replaced 17 million cubic meters of logs. Before the end of the five-year plan, as was earmarked by the plan, it will be necessary to considerably increase the production of wood fiber and wood chip slabs, using wastes as much as possible when processing them.

Last year about 4 million cubic meters of timber wastes were used by the hydrolysis industry. Here they produce 60 liters of ethyl alcohol, 15 kilograms of nutritive yeasts and other products from just 1 cubic meter. And each ton of yeasts that is fed to animals makes it possible to obtain more than 400 additional kilograms of pork or about 1.5 tons of poultry meat. Enterprises of the hydrolysis industry frequently do not work at full capacity because they have a shortage of raw material. The country has more than enough; it is only necessary to provide for regular shipments of timber wastes, primarily by rail transportation.

In the Bashstroydetal' production association they utilize about four-fifths of the timber wastes intelligently. They are processed into industrial chips, and at the Meleuz combine they have even created a semi-automated line for splicing short pieces of timber and wastes from carpentry, which annually saves up to 500 cubic meters of high-quality timber.

The Carpathian association imeni 60-letiya Sovetskaya Ukraina has accumulated good experience in comprehensive utilization of timber resources. Each year it produces more than a million cubic meters of timber, and more than half of it is from maintenance fellings and sanitary fellings, that is, without harm but, on the contrary, to the benefit of the forests. All the procurements are used locally, producing 550 kinds of products. The coefficient of comprehensive utilization of timber here is almost 0.9.

This coefficient is also high for the timber procurement workers of Volynskaya Oblast. They have set the task: to utilize everything--from the leaves to the roots. From the leaves and cones they produce vitamin meal, chlorophyll-carotene paste and therapeutic extracts. The stumps, roots and bark go for producing turpentine, resin, charcoal, and other useful things. The twigs, branches and low-growing trees and other wastes are processed into chipboard. They have arranged the output of souvenirs, artistic parquet, wicker items, shoulder straps for clothing and clothespins. All this produces hundreds of thousands of rubles in additional profit, part of which, it is appropriate to recall, goes into economic incentive funds for the enterprises and their collectives.

Unfortunately, far from all enterprises everywhere operate in this way, as a result of which many wastes are lost without profit. Of course, this is also related to the shortage of production capacities and equipment for their processing. But frequently there is not enough economic initiative. And here is what happens when it is manifested. The leader of the brigade of machine tool operators of the Mukachevo furniture combine, V. Yantso, became the initiator of a day each quarter when they work to save on raw and processed materials. The initiative was supported in the collective and they were concerned about the engineering support. Pieces of wood are glued together here and put to use. And, for instance, children's stools, which sell like hotcakes in the stores, are made completely, and up to 70,000 of them a year, out of scraps from parts of larger chairs. The Kirgizmebel' association and the Bikin timber plant (in Khabarov Kray) use wastes just as efficiently.

But in many places, where people do not want to burden themselves, the wood processing wastes are burned or taken to the dumps which, of course, does no good at all. And a good deal of timber material is thrown away, for example, by furniture makers. Thus an inspection of 294 enterprises of the USSR Ministry of the Timber, Pulp and Paper Industry revealed violations of standards at 223 of them. They rejected 3.5 million rubles worth of furniture; and a large quantity of slabs, veneer and other materials were expended for nothing.

Enterprises of the pulp and paper industry, following the example of the Kotlas and Solikamsk combines, whose experience was approved by the CPSU Central Committee, are reducing the weight of each square meter of product without harm to the quality. For example, at the Balakhninskiy combine during the past five years a square meter of newsprint has become 5 grams lighter. In the branch as a whole this made it possible to save 240,000 cubic meters of timber during the past year. It is not a simple matter, and technical improvements and additional efforts on the part of the workers are required. It is necessary to check more carefully on the texture of the pulp mass as well as on the quality of all components and chemicals, and to conduct the technological process more precisely. This, of course, complicates the work, but it also makes it possible to produce more paper without additional expenditures of raw material.

But it is not everywhere that they display this initiative and conscientiousness, and certain enterprises are producing heavy paper as usual, overexpending such valuable timber which is in short supply.

It is also possible and necessary to reduce its expenditure through more extensive utilization of spoiled sheets. Every ton of it replaces 3.5 cubic meters of timber and, moreover, when producing paper or cardboard it greatly reduces the expenditure of water and electric energy. This year it is intended to procure 2.7 million tons of spoiled paper, including 1.3 million tons as a result of gathering it from the population. This will make it possible to save about 9.5 cubic meters of timber or to avoid felling the timber on an area of 25 square kilometers.

This is a good thing but, according to calculations, there is considerably more spoiled paper in the country each year--up to 4 million tons, and, consequently, this valuable secondary raw material is still being utilized poorly and much of it goes to waste. Organizations that engage in gathering it have greater reserves. This industry too must reorient itself more decisively toward processing spoiled paper, refraining from counting on a permanent increase in the deliveries of timber.

A certain amount of progress has already been made in this respect. By the end of the five-year plan in Leningrad and Kiev factories are to be put into operation which produce approximately 300 tons of cardboard from spoiled paper, thus annually saving 4.5 million cubic meters of timber raw material.

We must firmly put a stop to wastefulness in the utilization of timber materials everywhere. Timber is our wealth and everyone must value it and save it from losses.

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